JULY 2011
DATA QUALITY REPORT
AND DATABASE UPDATE
GREENFIELD ENVIRONMENTAL
MULTISTATE TRUST LLC SODA SPRINGS, IDAHO FACILITY

August 9, 2011

Prepared by:

GLOBAL ENVIRONMENTAL TECHNOLOGIES L.L.C.

SALT LAKE CITY, UTAH

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August 9, 2011

Marc Weinreich, Vice President
Greenfield Environmental Multistate Trust LLC
1928 Eagle Crest Drive
Draper, UT 84020

RE: TRANSMITTAL: JULY 2011 LABORATORY DATA QUALITY REPORT AND RD/RA DATABASE UPDATE, TRONOX INC. SODA SPRINGS, IDAHO FACILITY

Dear Marc:

Please find transmitted the July 2011 Data Validation Report and the updated Remedial Design/Remedial Action (RD/RA) database. This report and the updated RD/RA database are produced on CD in order to streamline report production and data transmission, and to conserve paper resources. The report is saved in Adobe Portable Document Format (.pdf) and can be viewed and printed using the commonly available Adobe Acrobat Reader™.

The RD/RA database includes ground and surface water sampling analytical results between October 1995 and July 2011. As we have previously discussed with EPA, we have removed QA/QC samples (equipment blanks, matrix spikes and matrix spike duplicates) from the RD/RA database. The RD/RA database was constructed from the master ground water analytical database that included the RI/FS results.

We appreciate the opportunity to work with you on this project. If you have any questions regarding this transmittal, please contact us.

Very truly yours,
Global Environmental Technologies, LLC

John S. Brown, P.G.
Principal/Owner

Attachments: Validation Report and Current RD/RA Database Update–CD

xc: Bill Ryan — EPA Region X – (4 hard copies; 4 -CD copies)
Doug Tanner — IDEQ Pocatello –hard copy, CD copy
Dean Nygard — IDEQ Boise - hard copy, CD copy
Clyde Cody - IDEQ Boise - hard copy, CD copy
Ty Griffith - Greenfield Environmental Multistate Trust LLC - hard copy, CD Copy

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1.0 INTRODUCTION

This data validation report presents the findings of field and laboratory data and summarizes our opinion of the quality and usability of the data for the Remedial Design/Remedial Action (RD/RA) at the former Tronox Soda Springs, Idaho facility. The property is no longer in operation and is now managed by the Greenfield Environmental Multistate Trust.

Data validation presented in this report was performed using EPA guidelines. Organic and inorganic analytical results and supporting documentation were reviewed to assess data quality and usability for samples that were collected between July 7 and July 9, 2011. The July 2011 sampling event included low-flow sampling protocols, as approved by EPA on September 23, 1997.

Samples were obtained from on-site and from off-site ground and surface water sampling locations. Sampled locations are shown on Figure 1. Field water quality measurements are presented in Table 1. Selected low flow sampling parameters obtained during stabilization of the wells are presented on Figures 2 through 17.

Appendix A to this report contains the Remedial Design/Remedial Action (RD/RA) analytical database, beginning with October 1995. This database contains analytical data supplied by the laboratory following the completion of the Remedial Investigation/Feasibility Study (RI/FS) study. The data set contained within the database in Appendix A was prepared at the request of Region 10 EPA on September 23, 1997.

Sampling procedures used during the July 2011 sampling round were performed in accordance with the approved RD/RA Sampling and Analysis Plan (SAP) dated May 1997. The evaluation criteria used were those outlined in the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Organic and Inorganic Analyses. The sample names referred to in this report are those supplied by sampling personnel and used by the laboratory in labeling and reporting results.

Samples collected, collection sequence and analyses performed for the July 2011 sampling round are summarized in Table 2. Ground water parameters and analytical methods are presented in Table 3. Test America performed all of the laboratory analyses.

The sample identified as JUL11 is a blind duplicate collected from well KM-18. Matrix spike and matrix spike duplicate samples were obtained from well KM-7. The lab also performed selected matrix spikes and spike duplicates from wells KM-4, KM-5, KM-11, KM-12 and KM-12 for selected general chemistry parameters as required for data set quality assurance and control. No equipment blanks were taken in the field. Quality assurance/quality control (QA/QC) samples were evaluated as required by the guidelines, but QA/QC samples are not incorporated into the RD/RA database.

Some organic tentatively identified compound (TIC) names are truncated in the database column labeled "chemical name". This is a result of the CLP electronic data format provided from the laboratory that limits the reporting field length to 27 characters. This reporting format was requested by EPA at the beginning of the RI/FS. Therefore, TIC appearing to be identical in the chemical name field as the result of the field truncation should be distinguished and identified by their unique CAS number.

2.0 ORGANICS

2.1 Holding Times

The holding times for the semi-volatile (SVOA) and total petroleum hydrocarbons C-10 to C36 (TPH) analyses were assessed by comparing the sampling date with the date and time of analysis and preparation. All analyses for SVOA were performed within established (40 CFR 136) holding times, which are seven days from sample collection to extraction and forty days from extraction to analysis. Data reports indicate that extraction was performed within one day following receipt at the laboratory and analyzed within seven days following extraction.

2.2 Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance prior to sample analysis. Continuing calibration checks document satisfactory maintenance and adjustment of the instrument on a day-to-day basis. GC/MS and performance criteria are established to ensure mass resolution, identification, and sensitivity. Decafluorotriphenylphosphine (DFTPP) ion abundance criteria are used to check performance. GC/MS initial calibration review checklists indicated that the percent relative ion abundance was found to be acceptable.

An initial calibration curve is prepared for each analyte of interest. Five or more calibration standards are injected. A response factor is calculated by dividing the area of response of the characteristic ion by the concentration of each compound. Initial calibration conditions were verified by assessing the average relative response factors (RRF, $\geq$0.05) and the percent relative standard deviations (percent RSD, $\leq$ 20.0% or percent RSD $\leq$ 15.0% (DRO)) for each target compound. All performance criteria specified in the method were met.

The continuing calibration checks document that the instrument is giving satisfactory daily

performance. Percent D (drift) compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Results fell within the allowable percent D during the continuing calibration checks.

2.3 Blank Analysis

The assessment of blank analysis is to determine the existence and magnitude of contamination problems resulting from laboratory or field activities. A method blank was analyzed in the lab as part of the semi-volatile QA. Blank contaminant compounds included Benzyl alcohol, Bis(2-ethylhexyl) phthalate and unknown compounds at trace amounts. These results were flagged as estimated in the lab (J) because the results are less than the reporting limits for these compounds.

2.4 Surrogate Spikes

Laboratory performance on individual samples is established by means of spiking the sample. Samples, laboratory control samples, laboratory control sample duplicates, and method blanks are spiked with surrogate compounds prior to sample preparation. Surrogate sample recovery must fall within the following acceptable ranges for the surrogate compounds:

Compound	QC Limits Water (Percent)
Nitrobenzene-d5	48 - 120
2-Fluorobiphenyl	38 - 120
Terphenyl-d14	50 - 120
Phenol-d5	51 - 120
2-Fluorophenol	51 - 120
2,4,6-Tribromophenol	57 - 120

The QC limits shown for water are those that have been reported to be acceptable for water analysis. Data are not qualified with respect to surrogate recovery unless 2 or more semi volatile surrogates within the same fraction (base neutral or acid fraction) are out of

specification. Percent recoveries were within acceptable range for surrogates for the samples from well KM-8.

2.5 Tentatively Identified Compounds (TIC)

Well KM-8 is the only well where ground water samples are obtained for organics analysis. TICs reported from the lab in the semi volatile analysis of ground water from well KM-8 for July 2011 included unknown compounds. Tributyl phosphate (phosphoric acid tributyl ester), previously analyzed as a TIC was identified as a target analyte in the sample from well KM-8 at a concentration of 390 ug/l.

3.0 INORGANICS

3.1 Holding Times

The holding times for inorganic samples were assessed by comparing the sampling date with the date of analysis. Holding times were met for all inorganic analyses from the July 2011 sampling event.

3.2 Method Blank

The assessment of blank analytical results is required to determine the existence and magnitude of contamination problems. Contamination in the blank associated with the July 2011 sampling round included small concentrations of fluoride, manganese and vanadium. In each case, the results were below the reporting limit but greater than the method detection limit. The lab flagged these results (B). Alkalinity and bicarbonate alkalinity as CaCO3 were detected in method blank at levels that were above the method detection limit but below the reporting limit. The values are considered estimates, and were flagged with a "J" at the lab. Associated samples reported above the method detection limit or reporting limit have been "B" flagged by the lab.

3.3 Laboratory Control Samples (LCS)

The LCS monitors the overall performance of the steps in the preparation and analysis process for metals and general chemistry water quality parameters. Control samples were analyzed for each batch and results ranged from 69 to 107 percent recovery. All LCS were within the established control limits for each analyte.

3.4 Matrix Spike Sample Analysis

The matrix spike sample results from metals and general water quality parameters provide information about the effect of each sample matrix on the preparation and measurement

methodology. The sample obtained in the field for the matrix spike from the July 2011 round was KM-7. Matrix spikes of selected analytes from KM-5, KM-11 and KM-15 were also performed by the lab as required by the method. The acceptable range limits for matrix spike recovery vary per analyte. Matrix spike sample results ranged from 96 to 121 percent recovery. Spikes were within the established control limits for each analyte except Nitrate-Nitrite as N failed the recovery criteria high for the MS of sample KM-6MS (280-17927-2) and in Nitrate Nitrite as N failed the recovery criteria high for the MS of sample KM-15MS (280-17927-5) in batch 280-76645. The associated laboratory control sample (LCS) recovery met acceptance criteria. The result was qualified in the lab.

3.5 Matrix Spike Duplicate Sample Analysis

Laboratory duplicate analyses are indicators of laboratory precision based on each sample matrix. The sample used for the matrix spike duplicate for the July 2011 round was well KM-7. Matrix spike duplicates of selected analytes from KM-5, KM-11 and KM-15 were also performed by the lab. Arsenic failed the recovery criteria high for the MSD of sample KM-8MSD (280-17927-21) in batch 280-77033. The lab qualified the result because the concentration in the unspiked sample exceeded four times the spiking amount. Nitrate Nitrite as N failed the recovery criteria high for the MSD of sample KM-6MSD (280-17927-2) in batch 280-76645. Nitrate Nitrite as N failed the recovery criteria high for the MSD of sample KM-15MSD (280-17927-5) in batch 280-76645. Nitrate Nitrite as N failed the recovery criteria high for the MSD of sample KM-7MSD (280-17927-8) in batch 280-76645.

The control limits for the relative percent difference (RPD) varies for metals and for general chemistry parameters. RPDs ranged from 0 to 4 percent for the metals group and 0 to 2 percent for the general chemistry parameters. These results are within the acceptable range for the matrix spike duplicate samples.

4.0 FIELD QUALITY CONTROL

One blind field duplicate (KM-18 identified as JULY11) was submitted to the laboratory for an assessment of overall field and laboratory precision. Results of the sample and blind duplicate analyses are presented in Table 4. Relative percent differences were calculated for each analyte. The RPDs for the blind duplicate results were within the acceptable 20 percent criteria for chemical parameters. Based on these results, the data are considered satisfactory for evaluation of both field and laboratory quality control.

5.0 DATA USABILITY

Completeness of the July 2011 data set was performed by calculating the percentage of valid data points to the total data set. The completeness criterion of at least 90 percent valid data was achieved. Data from the July 2011 sampling round are all considered usable for the purposes of this project for the evaluation of ground and surface water quality. Therefore, the quality objectives under the data validation guidelines for the methods used were met for laboratory analytical data. Data are considered acceptable and useable for the RD/RA evaluation of the former Tronox site.

TABLES

TABLE 1
JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS

MAY ID	EVENT	TIME (h:m:s)	FLOW (gpm)	DTW (feet)	VOL EVAC (total gal)	pH (units)	TEMP (degrees C)	COND (umhos/cm)	TURB (NTU)
KM-2	07/08/11	8:55:00		37.52	STATIC				
KM-2	07/08/11	8:59:00	0.8	37.64	3.30	7.17	11.30	1992	1.05
KM-2	07/08/11	9:04:30	0.8	37.63	6.80	7.28	10.70	1949	0.94
KM-2	07/08/11	9:06:30	0.8	37.62	8.60	7.32	10.90	1924	1.02
KM-2	07/08/11	9:24:00	0.8	37.61	24.50	7.51	11.20	1836	1.05
KM-2	07/08/11	9:29:00	0.8	37.61	28.30	7.45	11.25	1823	0.84
KM-3	07/08/11	9:49:00		27.17	STATIC				
KM-3	07/08/11	9:55:00	0.35	27.47	2.60	7.21	11.80	5335	1.02
KM-3	07/08/11	9:58:00	0.35	27.38	3.50	7.35	11.10	5430	1.23
KM-3	07/08/11	10:00:00	0.35	27.44	4.30	7.38	11.30	5450	0.69
KM-3	07/08/11	10:06:30	0.35	27.44	5.90	7.41	12.10	5460	0.76
KM-4	07/08/11	12:27:00		37.86	STATIC				
KM-4	07/08/11	12:29:00	0.6	37.96	0.80	6.98	11.00	1341	2.31
KM-4	07/08/11	12:32:00	0.6	37.97	1.70	7.09	10.70	1345	1.17
KM-4	07/08/11	12:36:00	0.6	37.97	4.60	7.19	11.00	1541	0.98
KM-4	07/08/11	12:38:00	0.6	37.97	5.90	7.20	11.20	1619	0.71
KM-4	07/08/11	12:41:00	0.6	37.97	8.20	7.23	11.25	1765	0.65
KM-5	07/08/11	11:12:00		33.77	STATIC				
KM-5	07/08/11	11:14:00	0.5	33.93	1.30	7.00	12.30	1135	5.59
KM-5	07/08/11	11:16:00	0.5	33.93	2.10	7.07	11.30	1113	4.24
KM-5	07/08/11	11:19:00	0.5	33.93	3.00	7.05	11.70	1140	2.07
KM-5	07/08/11	11:22:00	0.5	33.92	3.90	7.07	12.20	1150	0.92
KM-6	07/08/11	13:36:00		25.88	STATIC				
KM-6	07/08/11	13:38:00	0.75	25.94	1.80	7.03	12.20	1534	1.40
KM-6	07/08/11	13:41:00	0.75	25.92	3.20	7.01	12.10	1523	0.78
KM-6	07/08/11	13:45:00	0.75	25.92	6.50	7.02	11.70	1545	1.25
KM-6	07/08/11	13:48:00	0.75	25.92	9.10	7.04	11.95	1546	0.77
KM-7	07/08/11	11:39:00		37.16	STATIC				
KM-7	07/08/11	11:40:00	0.7	37.25	1.50	6.94	11.40	1151	0.68
KM-7	07/08/11	11:43:00	0.7	37.24	3.90	7.00	11.50	1163	0.49
KM-7	07/08/11	11:46:00	0.7	37.24	4.80	7.04	11.80	1144	0.48
KM-7	07/08/11	11:52:00	0.7	37.25	9.10	7.12	12.30	1097	0.50
KM-8	07/09/11	12:59:00		30.58	STATIC				
KM-8	07/09/11	13:03:00	0.4	30.73	1.20	6.91	11.80	13910	165.00
KM-8	07/09/11	13:05:00	0.4	30.74	2.00	6.78	10.90	14360	153.00
KM-8	07/09/11	13:07:00	0.4	30.72	3.10	6.72	11.20	14370	136.00
KM-8	07/09/11	13:15:00	0.4	30.71	6.40	6.71	12.10	14370	99.50
KM-9	07/08/11	14:06:30		30.44					
KM-9	07/08/11	14:11:00	0.25	30.78	2.40	7.18	12.50	946	1.93
KM-9	07/08/11	14:15:00	0.25	30.75	2.90	7.08	12.40	953	1.44
KM-9	07/08/11	14:18:00	0.25	30.73	3.40	7.06	12.70	955	1.49
KM-9	07/08/11	14:22:00	0.25	30.72	4.10	7.29	13.60	954	1.35
KM-11	07/08/11	10:22:00		26.54	STATIC				
KM-11	07/08/11	10:23:30	0.13	26.60	1.10	7.10	10.50	927	0.78
KM-11	07/08/11	10:29:00	0.13	26.63	1.80	7.19	10.55	917	3.29
KM-11	07/08/11	10:33:00	0.13	26.62	2.40	7.19	10.60	916	2.20
KM-11	07/08/11	11:53:00	0.13	26.62	4.00	7.20	11.10	920	1.50
KM-12	07/09/11	12:39:00		27.63	STATIC				
KM-12	07/09/11	12:43:30	0.6	27.73	0.50	7.20	10.35	1073	0.48
KM-12	07/09/11	12:45:00	0.6	27.73	3.30	7.26	10.50	1079	0.65
KM-12	07/09/11	12:47:00	0.6	27.74	4.90	7.23	10.50	1084	0.61
KM-12	07/09/11	12:49:00	0.6	27.74	6.10	7.20	10.70	1086	0.59

TABLE 1
JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS

MAY ID	EVENT	TIME (h:m:s)	FLOW (gpm)	DTW (feet)	VOL EVAC (total gal)	pH (units)	TEMP (degrees C)	COND (umhos/cm)	TURB (NTU)
KM-13	07/08/11	14:39:00		28.79	STATIC				
KM-13	07/08/11	14:41:00	0.3	28.95	0.20	7.35	11.80	960	1.15
KM-13	07/08/11	14:43:00	0.3	29.03	0.90	7.14	10.90	987	0.70
KM-13	07/08/11	14:45:00	0.3	29.03	2.00	7.12	11.10	1010	0.60
KM-13	07/08/11	14:47:00	0.3	29.03	2.40	7.12	11.40	1016	0.48
KM-15	07/07/11	16:08:30		37.50	STATIC				
KM-15	07/07/11	16:14:00	0.35	37.80	2.10	7.16	11.90	1087	0.68
KM-15	07/07/11	16:16:30	0.35	37.79	3.10	7.18	11.40	1097	0.59
KM-15	07/07/11	16:18:30	0.35	37.79	3.40	7.35	11.70	1099	0.54
KM-15	07/07/11	16:23:00	0.35	37.79	5.20	7.40	11.50	1106	0.67
KM-16	07/07/11	15:23:00		55.36	STATIC				
KM-16	07/07/11	15:25:30	0.65	55.31	2.80	7.04	11.65	1293	5.02
KM-16	07/07/11	15:29:00	0.65	55.31	4.70	7.23	11.70	1295	0.77
KM-16	07/07/11	15:32:30	0.65	55.31	6.90	7.22	12.00	1298	0.74
KM-16	07/07/11	15:36:00	0.65	55.31	8.60	7.28	11.90	1298	0.24
KM-17	07/07/11	14:31:00		24.53	STATIC				
KM-17	07/07/11	14:41:30	0.4	24.78	5.60	7.62	12.80	970	1.12
KM-17	07/07/11	14:45:00	0.4	24.83	5.80	7.40	13.00	981	0.61
KM-17	07/07/11	14:48:00	0.4	24.84	7.60	7.41	13.40	986	0.78
KM-17	07/07/11	14:52:00	0.4	24.85	9.40	7.56	13.60	987	0.67
KM-18	07/07/11	16:40:00		60.37	STATIC				
KM-18	07/07/11	16:43:00	0.5	60.52	2.10	7.16	10.90	979	0.83
KM-18	07/07/11	16:46:00	0.5	60.53	3.40	7.26	10.60	975	0.62
KM-18	07/07/11	16:48:30	0.5	60.53	4.30	7.20	10.60	1017	0.65
KM-18	07/07/11	16:51:00	0.5	60.53	5.50	7.27	11.10	1048	0.88
KM-19	07/09/11	12:09:00		27.91	STATIC				
KM-19	07/09/11	12:13:00	0.85	27.97	2.80	7.09	10.50	832	0.96
KM-19	07/09/11	12:15:00	0.85	27.98	3.60	7.12	10.50	833	0.67
KM-19	07/09/11	12:17:00	0.85	27.98	5.80	7.16	10.60	843	15.20
KM-19	07/09/11	12:22:00	0.85	27.98	9.20	7.20	11.20	869	4.13
KM-19	07/09/11	12:25:00	0.85	27.98	11.10	7.19	11.10	869	2.09
KM-19	07/09/11	12:26:00	0.85	27.98	12.90	7.25	11.30	871	1.19

TABLE 2
GROUND AND SURFACE WATER
SAMPLE COLLECTION AND ANALYSIS

Well ID or Spring Name	Total Depth of Well (ft)	Sampling Sequence	General Indicators, Anion, and Cations	Unfiltered Metals	SVOCs	TPH
KM-1	56	Not Sampled	X	X		
KM-2	57	9	X	X		
KM-3	49	10	X	X		
KM-4	54	14	X	X		
KM-5	48	12	X	X		
KM-6	45	15	X	X		
KM-7	56	13	X	X		
KM-8	45	20	X	X	X	X
KM-9	58	16		X		
KM-10	120	Not Sampled	X	X		
KM-11	100	11	X	X		
KM-12	155	19	X	X		
KM-13	56	17	X	X		
KM-15	54	7	X	X		
KM-16	73	6	X	X		
KM-17	48	5	X	X		
KM-18	172	8	X	X		
KM-19	218	18	X	X		
Finch Spring	N/A	1	X	X		
Big Spring	N/A	4	X	X		
Upper Ledger Spring	N/A	2	X	X		
Lower Ledger Spring	N/A	3	X	X		

TABLE 3
GROUND WATER PARAMETER AND ANALYTICAL METHODS

Analyte	Analtical Method (1,2)	Holding Time	Reporting Limit (3)
Alkalinity	SM2320B	14 Days	5.0 mg/l
Total Dissolved Solids	2540C	7 Days	10.0 mg/l
Turbidity	N/A	Analyze in field	
pH	N/A	Analyze in field	
Specific Conductance	2510B	28 Days	2.0 umhos/cm
Ion Balance	1030F & API		
Bicarbonate	SM2320B	14 Days	5.0 mg/l
Carbonate	SM2320B	14 Days	5.0 mg/l
Chloride	300.0A	28 Days	3.0 mg/l
Fluoride	340.2	28 Days	0.1 mg/l
Nitrate+Nitrite	353.2	28 Days	0.1 mg/l
Sulfate	300.0A	28 Days	5.0 mg/l
Total Metals			
Metals Digestion	SW846 3010A		
Calcium	SW846 6010B	6 Months	200 ug/l
Magnesium	SW846 6010B	6 Months	200 ug/l
Potassium	SW846 6010B	6 Months	500 ug/l
Sodium	SW846 6010B	6 Months	2000 ug/l
Total Aluminum	SW846 6010B	6 Months	100 ug/l
Total Arsenic	6020 (ICP/MS)	6 Months	5.0 ug/l
Total Barium	SW846 6010B	6 Months	10 ug/l
Total Cadmium	SW846 6010B	6 Months	5.0 ug/l
Total Cobalt	SW846 6010B	6 Months	10 ug/l
Total Copper	SW846 6010B	6 Months	20 ug/l
Total Manganese	SW846 6010B	6 Months	10 ug/l
Total Iron	SW846 6010B	6 Months	10 ug/l
Total Molybdenum	SW846 6010B	6 Months	20 ug/l
Total Nickel	SW846 6010B	6 Months	40 ug/l
Total Silver	SW846 6010B	6 Months	10 ug/l
Total Vanadium	SW846 6010B	6 Months	10 ug/l
Organics	**Analytical Method (1,2)**	**Holding Time**	**Reporting Limit (3)**
TPH C-10 – C-36	SW846 6010B	28 Days	1.0 mg/l
Semi-Volatile Organic Compounds	8270C	7 Days (extraction) 40 Days (analysis)	Compound/ dilution-specific

TABLE 3
GROUND WATER PARAMETER AND ANALYTICAL METHODS
(Continued)

1. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Office of Solid Waste, U.S. Environmental Protection Agency, Document Control No. 995-001-00000-1, 1986.

2. Methods for Chemical Analysis of Water and Waste, EPA-600/4-79/020, EMSL, Cincinnati, OH, 1983.

3. Reporting Limits, reported by STL, October 2004. Reporting limits vary with dilution.

TABLE 4

July 2011 Blind Duplicate Sample Relative Percent Difference

PROJECT ID	SAMPLE ID	DATE	CAS NO.	CHEMICAL NAME	VALUE	UNITS	DET. LIMIT	DET. QUAL.	QUAL	VALIDATION	ALIQUOT
280-17927-1	11-Jul	7/7/2011 17:40	STL00171	Alkalinity	430	mg/L	5	B			SA
280-17927-2	KM-18	7/7/2011 17:00	STL00171	Alkalinity	410	mg/L	5				SA
RPD					4.76						
280-17927-1	11-Jul	7/7/2011 17:40	7429-90-5	Aluminum	ND	ug/L	100				SA
280-17927-2	KM-18	7/7/2011 17:00	7429-90-5	Aluminum	ND	ug/L	100				SA
RPD					ND						
280-17927-1	11-Jul	7/7/2011 17:40	STL00809	Anion/Cation Balance	-2.5	%					SA
280-17927-2	KM-18	7/7/2011 17:00	STL00809	Anion/Cation Balance	-0.82	%					SA
RPD					ND						
280-17927-1	11-Jul	7/7/2011 17:40	7440-38-2	Arsenic	1.5	ug/L	5	J			SA
280-17927-2	KM-18	7/7/2011 17:00	7440-38-2	Arsenic	1.5	ug/L	5	J			SA
RPD					0.00						
280-17927-1	11-Jul	7/7/2011 17:40	7440-39-3	Barium	45	ug/L	10				SA
280-17927-2	KM-18	7/7/2011 17:00	7440-39-3	Barium	46	ug/L	10				SA
RPD					2.20						
280-17927-1	11-Jul	7/7/2011 17:40	STL00138	Bicarbonate Alkalinity as CaCO3	430	mg/L	5	B			SA
280-17927-2	KM-18	7/7/2011 17:00	STL00138	Bicarbonate Alkalinity as CaCO3	410	mg/L	5				SA
RPD					4.76						
280-17927-1	11-Jul	7/7/2011 17:40	7440-43-9	Cadmium	ND	ug/L	5				SA
280-17927-2	KM-18	7/7/2011 17:00	7440-43-9	Cadmium	ND	ug/L	5				SA
RPD					ND						
280-17927-1	11-Jul	7/7/2011 17:40	7440-70-2	Calcium	120000	ug/L	200				SA
280-17927-2	KM-18	7/7/2011 17:00	7440-70-2	Calcium	120000	ug/L	200				SA
RPD					0.00						
280-17927-1	11-Jul	7/7/2011 17:40	STL00154	Carbonate Alkalinity as CaCO3	ND	mg/L	5				SA
280-17927-2	KM-18	7/7/2011 17:00	STL00154	Carbonate Alkalinity as CaCO3	ND	mg/L	5				SA
RPD					ND						
280-17927-1	11-Jul	7/7/2011 17:40	16887-00-6	Chloride	34	mg/L	3				SA
280-17927-2	KM-18	7/7/2011 17:00	16887-00-6	Chloride	33	mg/L	3				SA
RPD					2.99						
280-17927-1	11-Jul	7/7/2011 17:40	7440-48-4	Cobalt	ND	ug/L	10				SA
280-17927-2	KM-18	7/7/2011 17:00	7440-48-4	Cobalt	ND	ug/L	10				SA
RPD					ND						
280-17927-1	11-Jul	7/7/2011 17:40	7440-50-8	Copper	ND	ug/L	15				SA
280-17927-2	KM-18	7/7/2011 17:00	7440-50-8	Copper	ND	ug/L	15				SA
RPD					ND						

TABLE 4

July 2011 Blind Duplicate Sample Relative Percent Difference

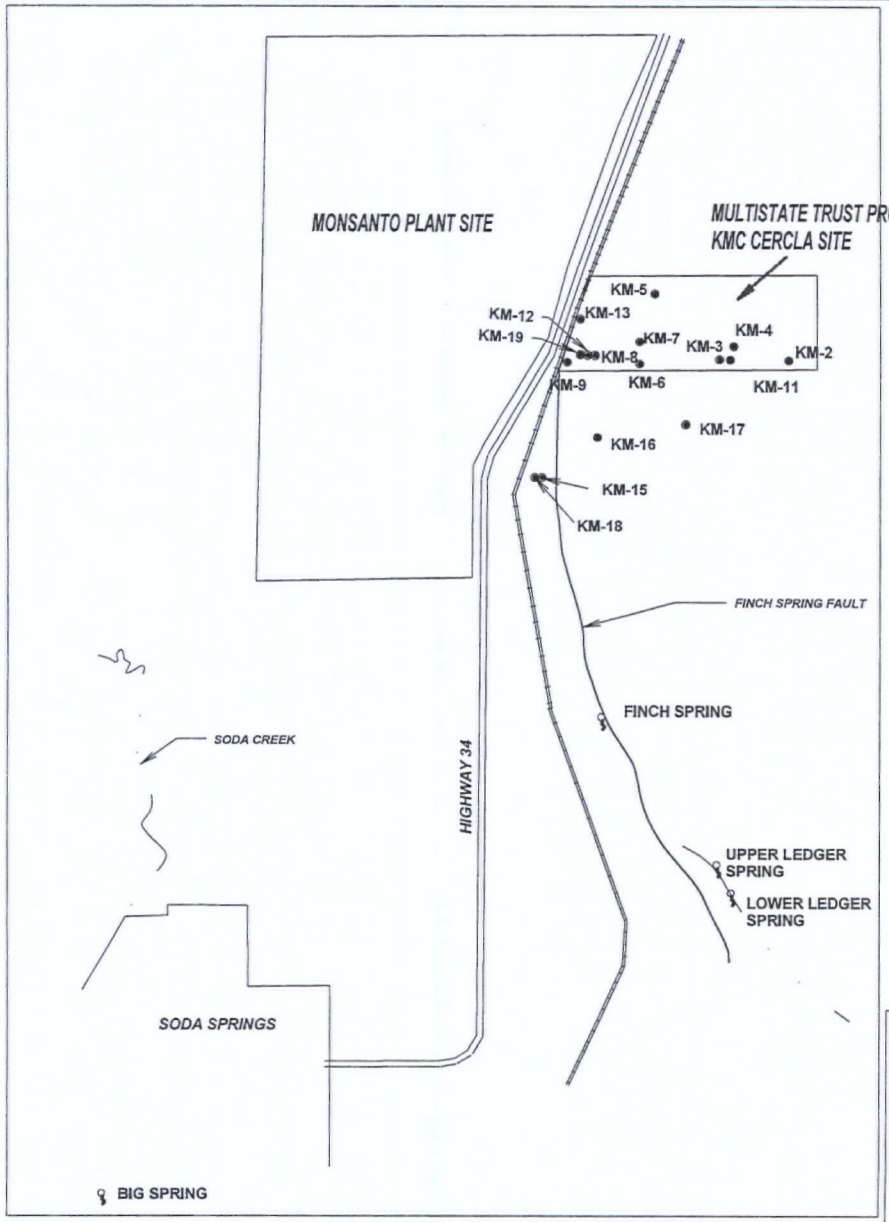
PROJECT ID	SAMPLE ID	DATE	CAS NO.	CHEMICAL NAME	VALUE	UNITS	DET. LIMIT	DET. QUAL	QUAL	VALIDATION	ALIQUOT
280-17927-1	11-Jul	7/7/2011 17:40	16984-48-8	Fluoride	0.31	mg/L	0.5	J B			SA
280-17927-2	KM-18	7/7/2011 17:00	16984-48-8	Fluoride	0.28	mg/L	0.5	J B			SA
RPD					10.17						
280-17927-1	11-Jul	7/7/2011 17:40	STL00127	Hydroxide Alkalinity	ND	mg/L	5				SA
280-17927-2	KM-18	7/7/2011 17:00	STL00127	Hydroxide Alkalinity	ND	mg/L	5				SA
RPD					ND						
280-17927-1	11-Jul	7/7/2011 17:40	7439-95-4	Magnesium	42000	ug/L	200				SA
280-17927-2	KM-18	7/7/2011 17:00	7439-95-4	Magnesium	42000	ug/L	200				SA
RPD					0.00						
280-17927-1	11-Jul	7/7/2011 17:40	7439-96-5	Manganese	37	ug/L	10	B			SA
280-17927-2	KM-18	7/7/2011 17:00	7439-96-5	Manganese	37	ug/L	10	B			SA
RPD					0.00						
280-17927-1	11-Jul	7/7/2011 17:40	7439-98-7	Molybdenum	510	ug/L	20				SA
280-17927-2	KM-18	7/7/2011 17:00	7439-98-7	Molybdenum	520	ug/L	20				SA
RPD					1.94						
280-17927-1	11-Jul	7/7/2011 17:40	7440-02-0	Nickel	2.1	ug/L	40	J			SA
280-17927-2	KM-18	7/7/2011 17:00	7440-02-0	Nickel	2.3	ug/L	40	J			SA
RPD					9.09						
280-17927-1	11-Jul	7/7/2011 17:40	STL00217	Nitrate Nitrite as N	8.5	mg/L	0.1				SA
280-17927-2	KM-18	7/7/2011 17:00	STL00217	Nitrate Nitrite as N	8.9	mg/L	0.1				SA
RPD					4.60						
280-17927-1	11-Jul	7/7/2011 17:40	STL00633	Percent Difference	-2.5	%					SA
280-17927-2	KM-18	7/7/2011 17:00	STL00633	Percent Difference	-0.82	%					SA
RPD					ND						
280-17927-1	11-Jul	7/7/2011 17:40	9/7/7440	Potassium	5000	ug/L	3000				SA
280-17927-2	KM-18	7/7/2011 17:00	9/7/7440	Potassium	5100	ug/L	3000				SA
RPD					1.98						
280-17927-1	11-Jul	7/7/2011 17:40	7440-22-4	Silver	ND	ug/L	10				SA
280-17927-2	KM-18	7/7/2011 17:00	7440-22-4	Silver	ND	ug/L	10				SA
RPD					ND						
280-17927-1	11-Jul	7/7/2011 17:40	7440-23-5	Sodium	48000	ug/L	1000				SA
280-17927-2	KM-18	7/7/2011 17:00	7440-23-5	Sodium	48000	ug/L	1000				SA
RPD					0.00						
280-17927-1	11-Jul	7/7/2011 17:40	STL00244	Specific Conductance	1100	umhos/cm	2				SA
280-17927-2	KM-18	7/7/2011 17:00	STL00244	Specific Conductance	1100	umhos/cm	2				SA
RPD					0.00						

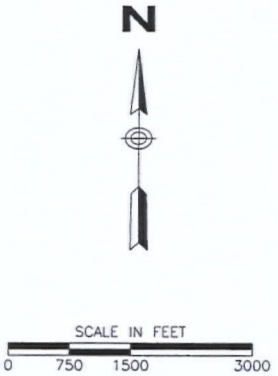
TABLE 4

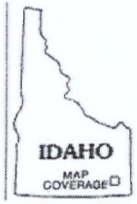
July 2011 Blind Duplicate Sample Relative Percent Difference

PROJECT ID	SAMPLE ID	DATE	CAS NO.	CHEMICAL NAME	VALUE	UNITS	DET. LIMIT	DET. QUAL	QUAL	VALIDATION	ALIQUOT
280-17927-1	11-Jul	7/7/2011 17:40	14808-79-8	Sulfate	100	mg/L	25				SA
280-17927-2	KM-18	7/7/2011 17:00	14808-79-8	Sulfate	100	mg/L	25				SA
RPD					0.00						
280-17927-1	11-Jul	7/7/2011 17:40	STL00473	Total Anions	12	meq/L					SA
280-17927-2	KM-18	7/7/2011 17:00	STL00473	Total Anions	12	meq/L					SA
RPD					0.00						
280-17927-1	11-Jul	7/7/2011 17:40	STL00474	Total Cations	12	meq/L					SA
280-17927-2	KM-18	7/7/2011 17:00	STL00474	Total Cations	12	meq/L					SA
RPD					0.00						
280-17927-1	11-Jul	7/7/2011 17:40	STL00242	Total Dissolved Solids	630	mg/L	10				SA
280-17927-2	KM-18	7/7/2011 17:00	STL00242	Total Dissolved Solids	640	mg/L	10				SA
RPD					1.57						
280-17927-1	11-Jul	7/7/2011 17:40	7440-62-2	Vanadium	600	ug/L	10	B			SA
280-17927-2	KM-18	7/7/2011 17:00	7440-62-2	Vanadium	610	ug/L	10	B			SA
RPD					1.65						

FIGURES







JULY 2011 DATA QUALITY REPORT

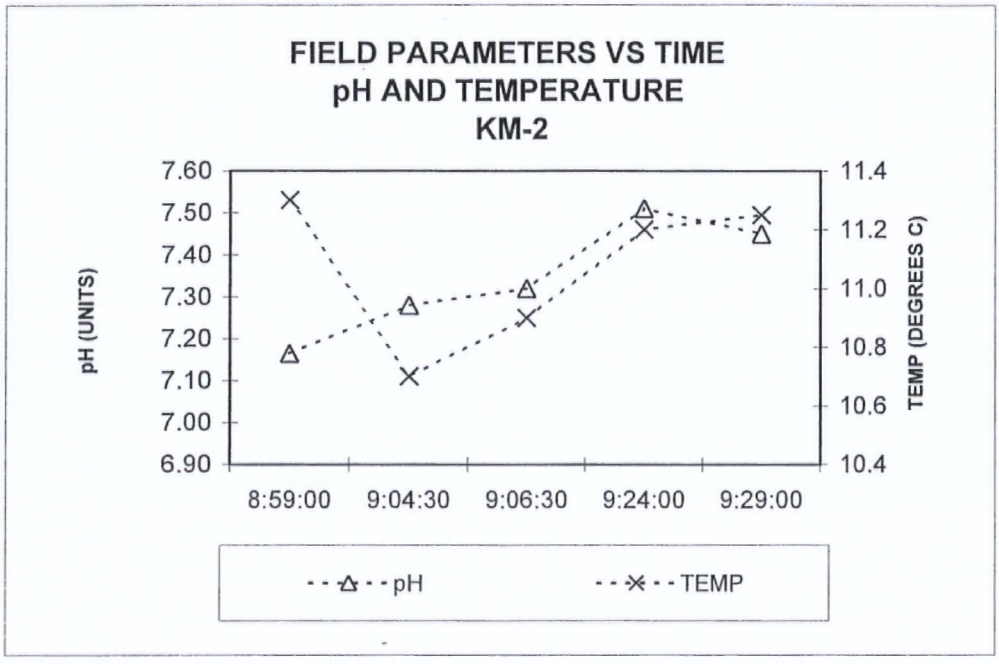
TITLE

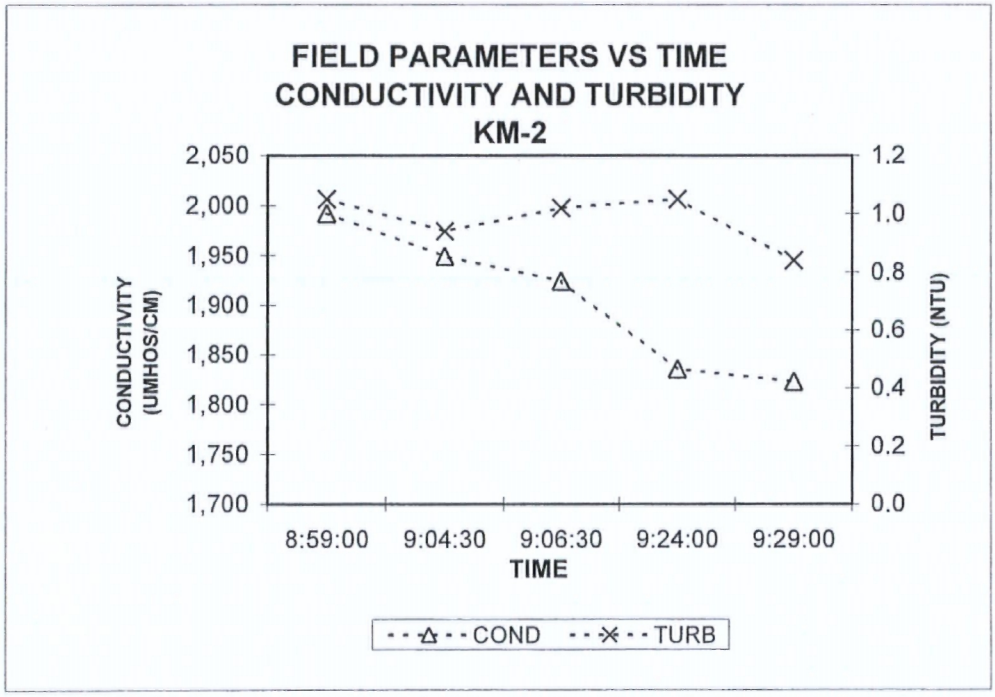
GROUND AND SURFACE WATER SAMPLE LOCATIONS JULY 2011

SIZE	CAGE CODE	DWG NO	REV
B		WATERSAMPLELOCATIONS.TCW	0

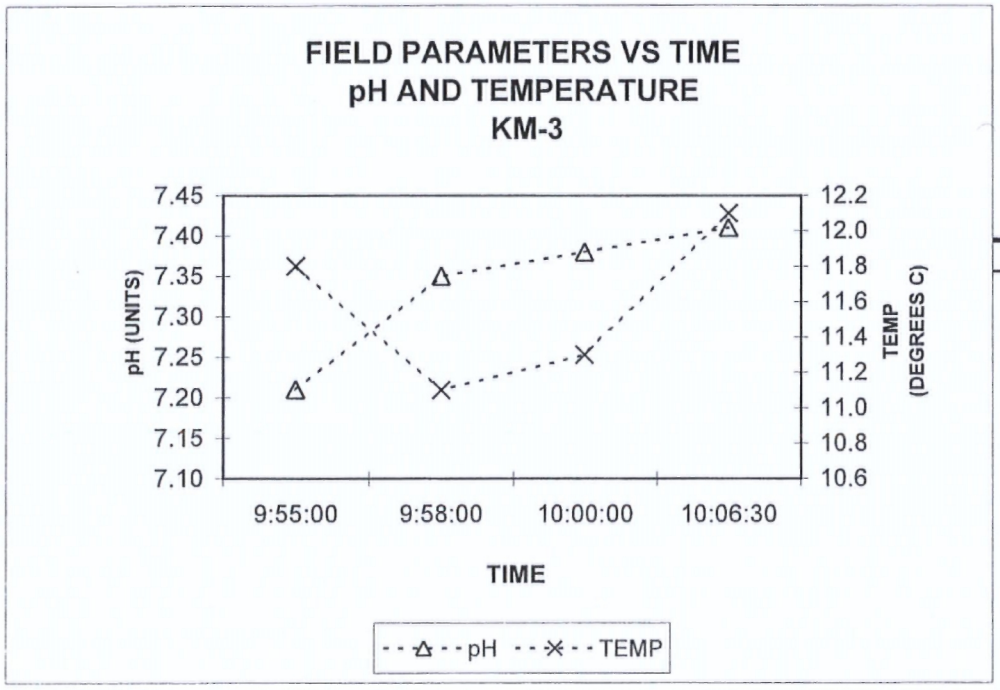
SCALE	SHEET
AS SHOWN	FIGURE 1

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS





JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



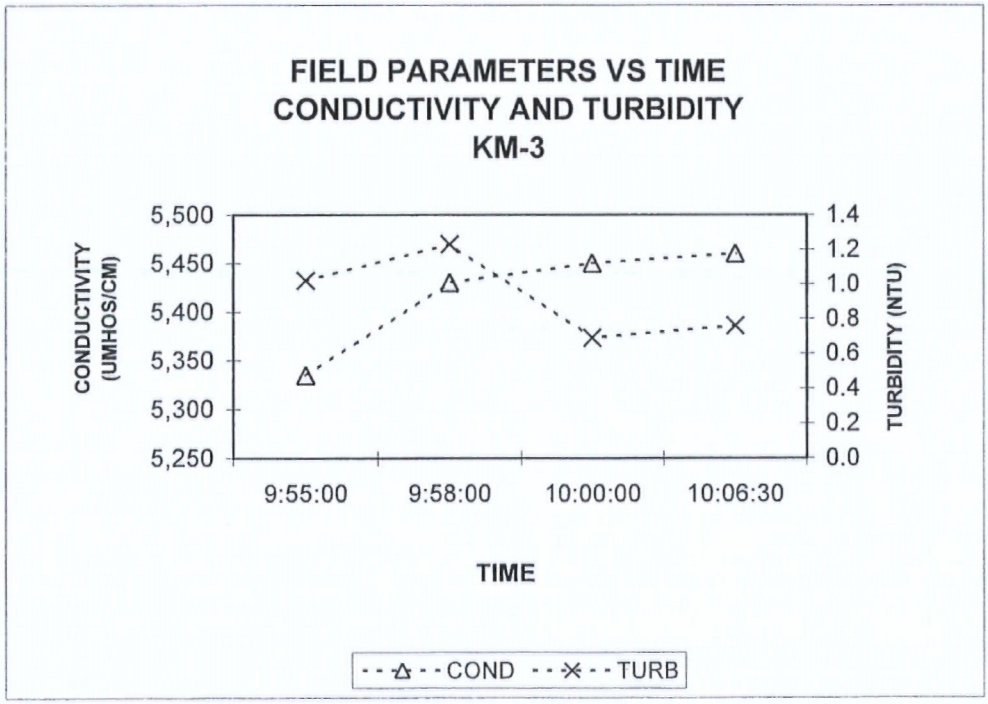
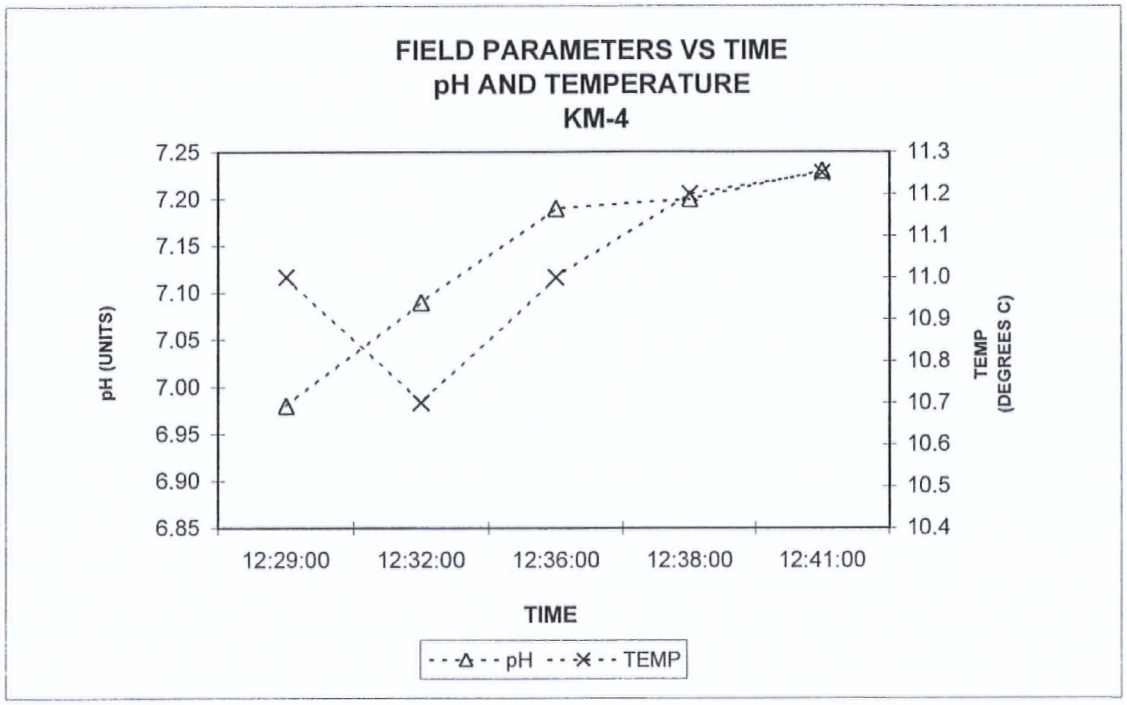


FIGURE 3

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



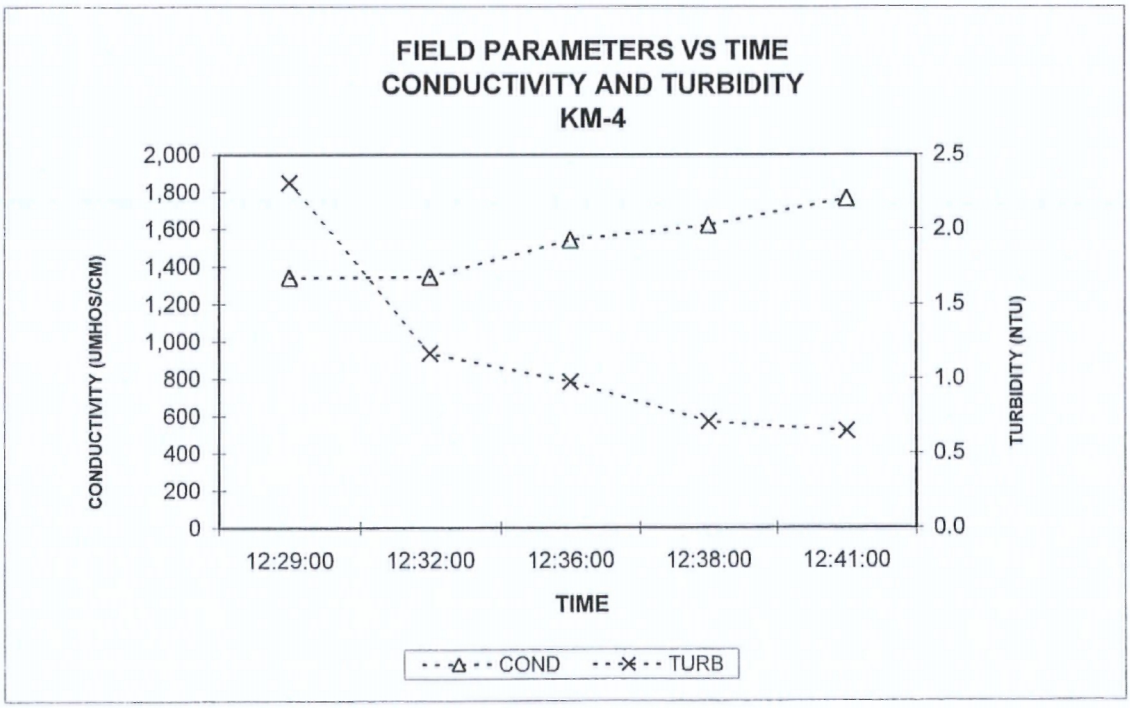
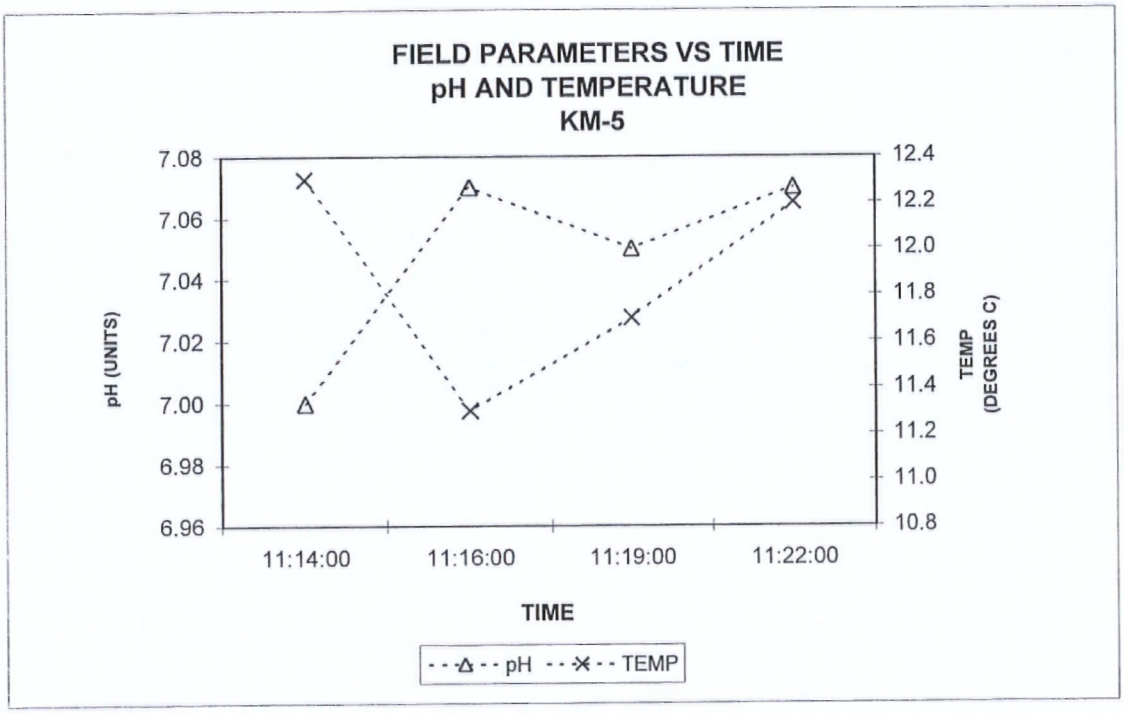


FIGURE 4

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



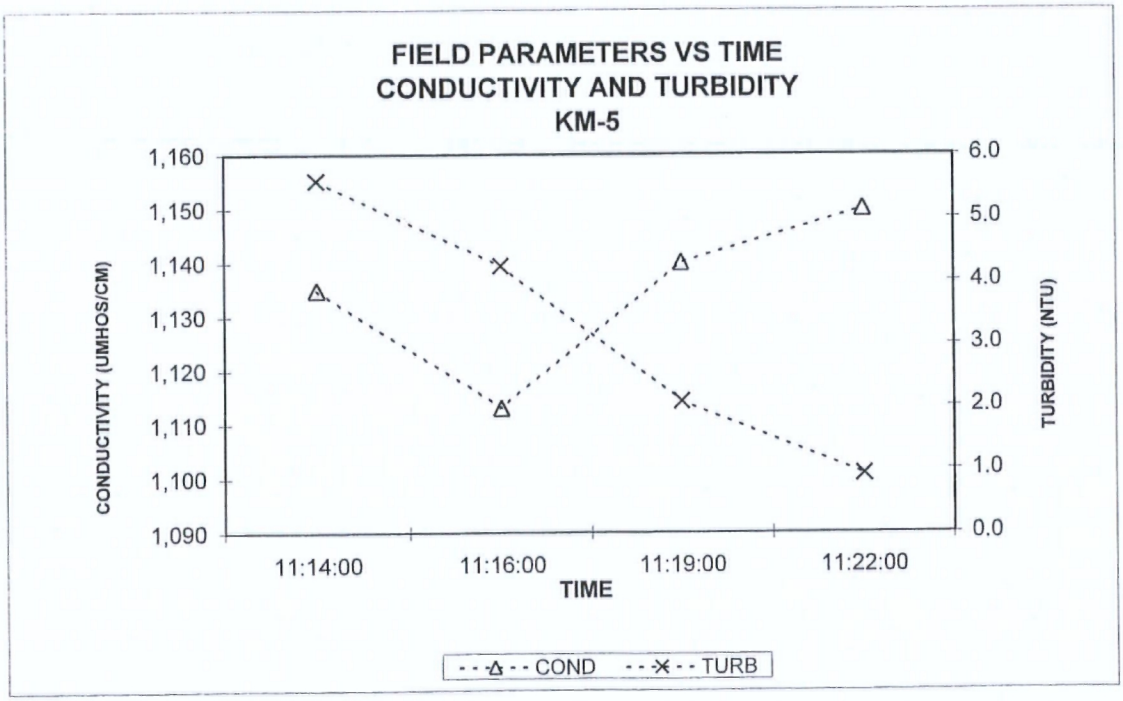
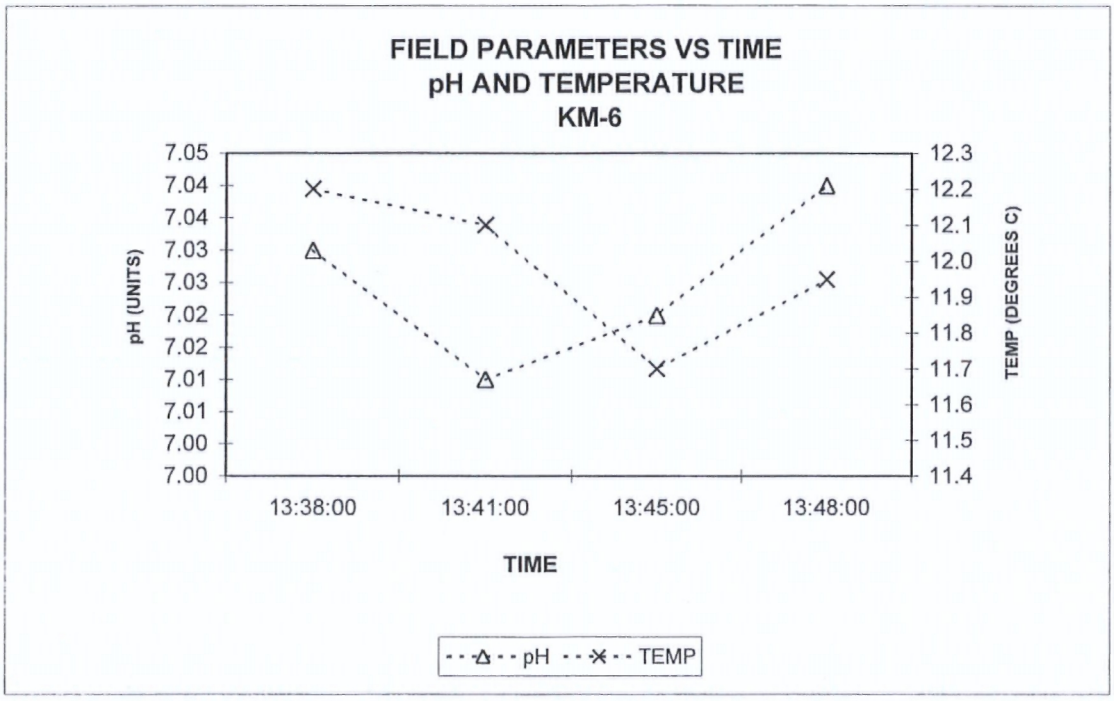


FIGURE 5

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



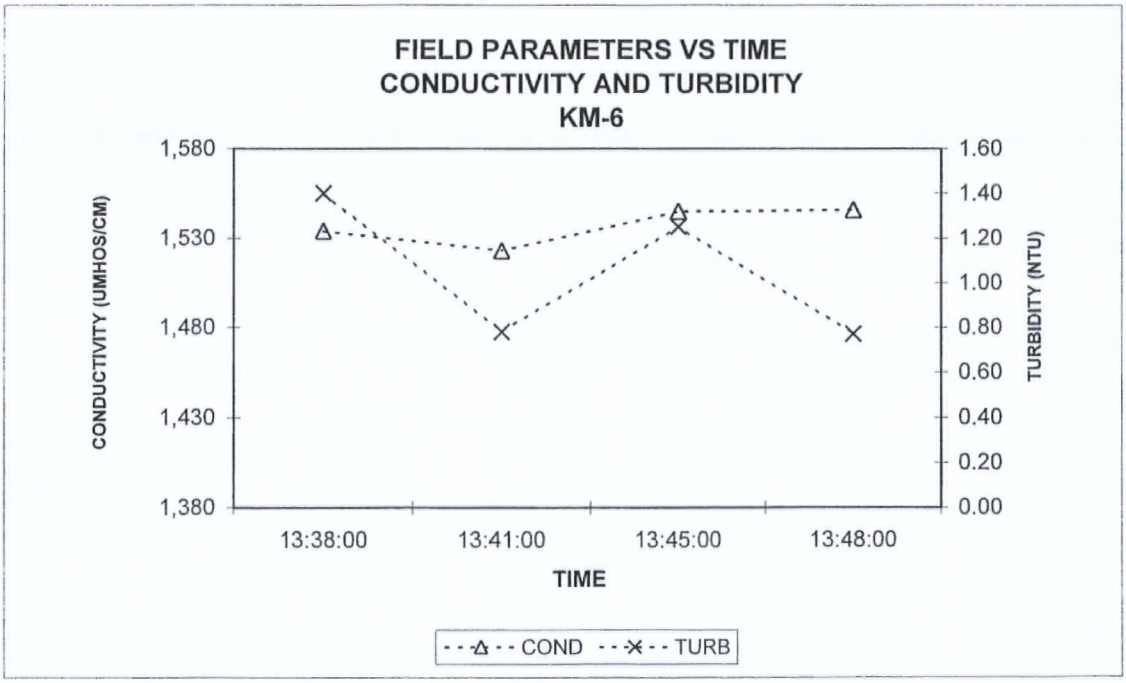
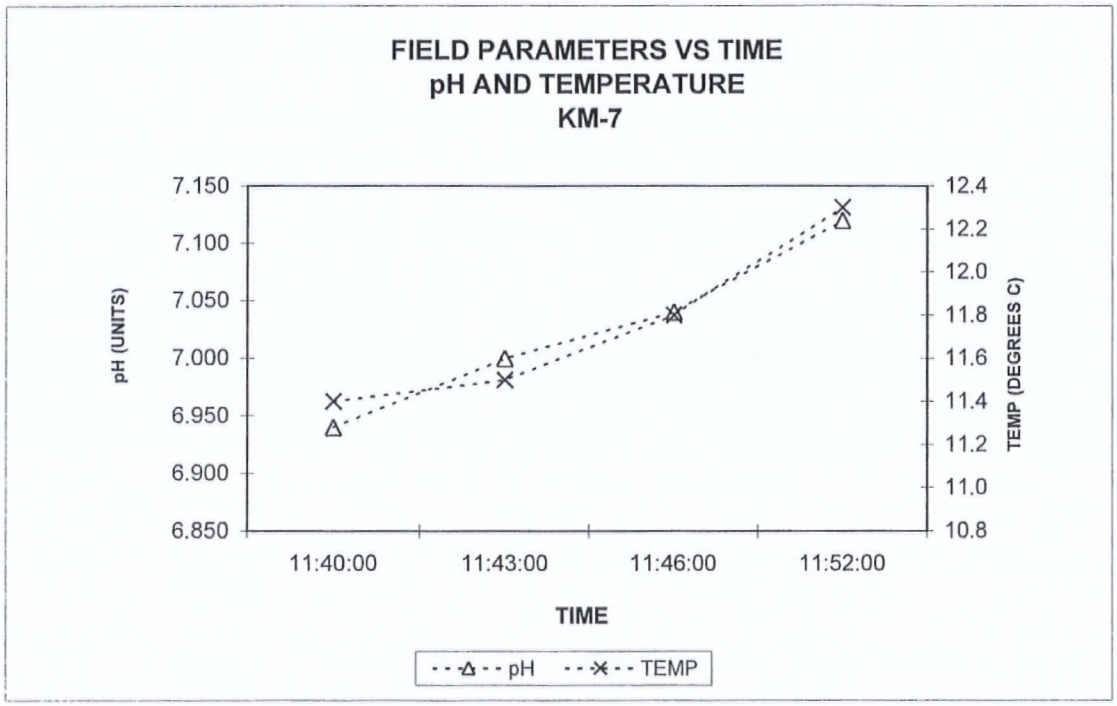


FIGURE 6

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



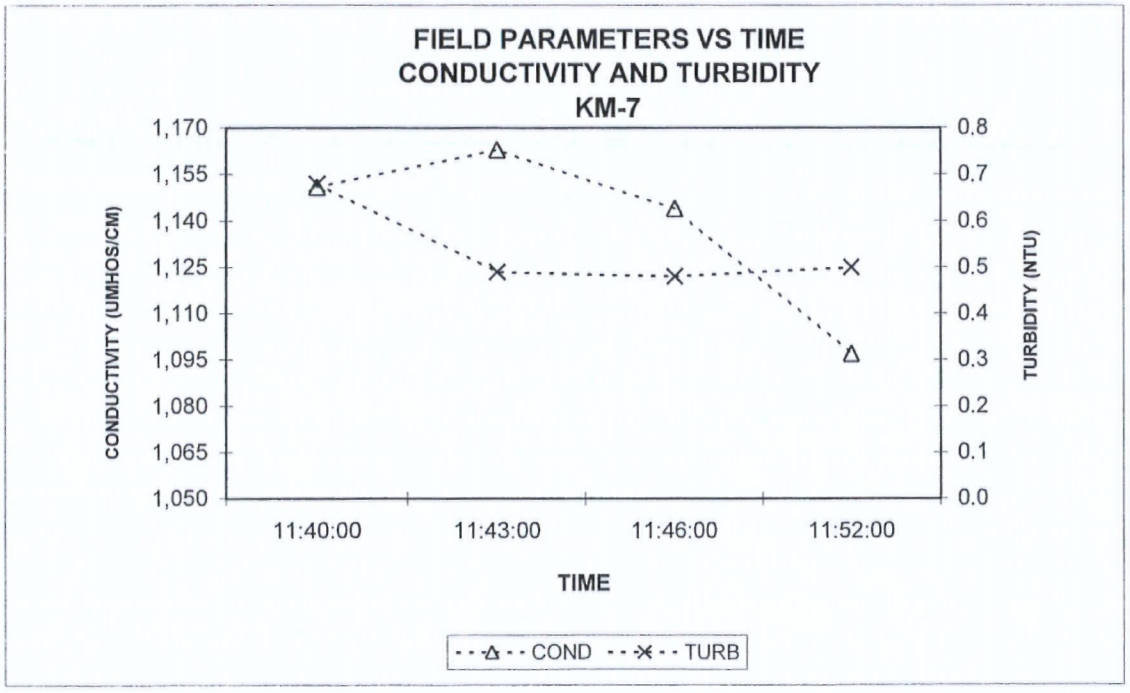
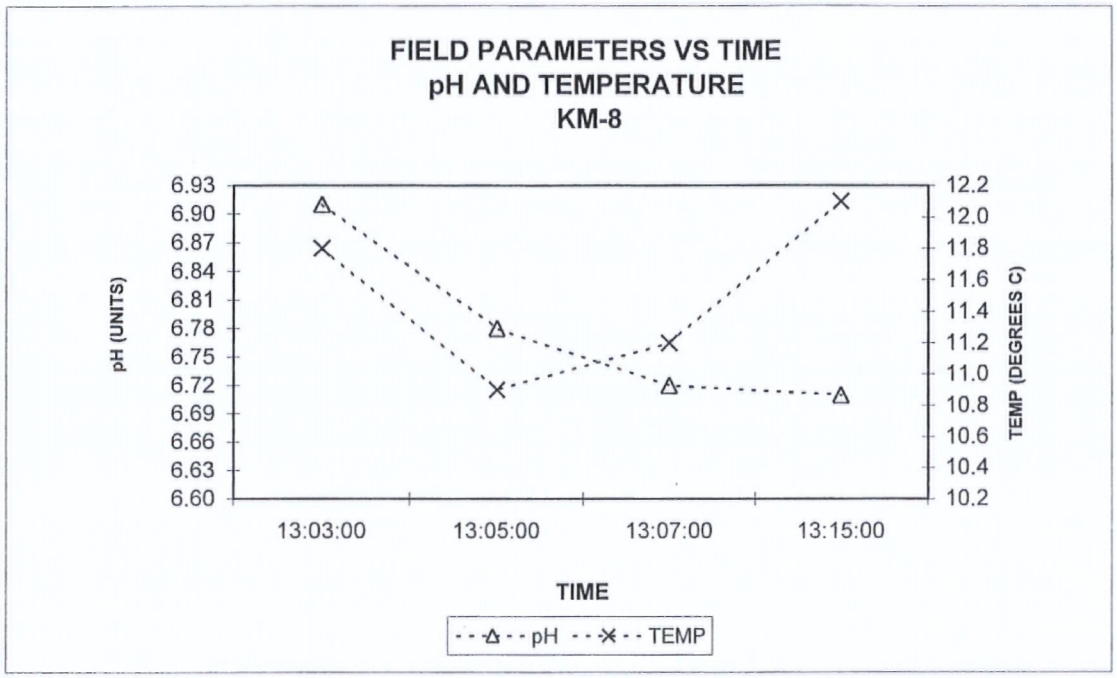


FIGURE 7

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



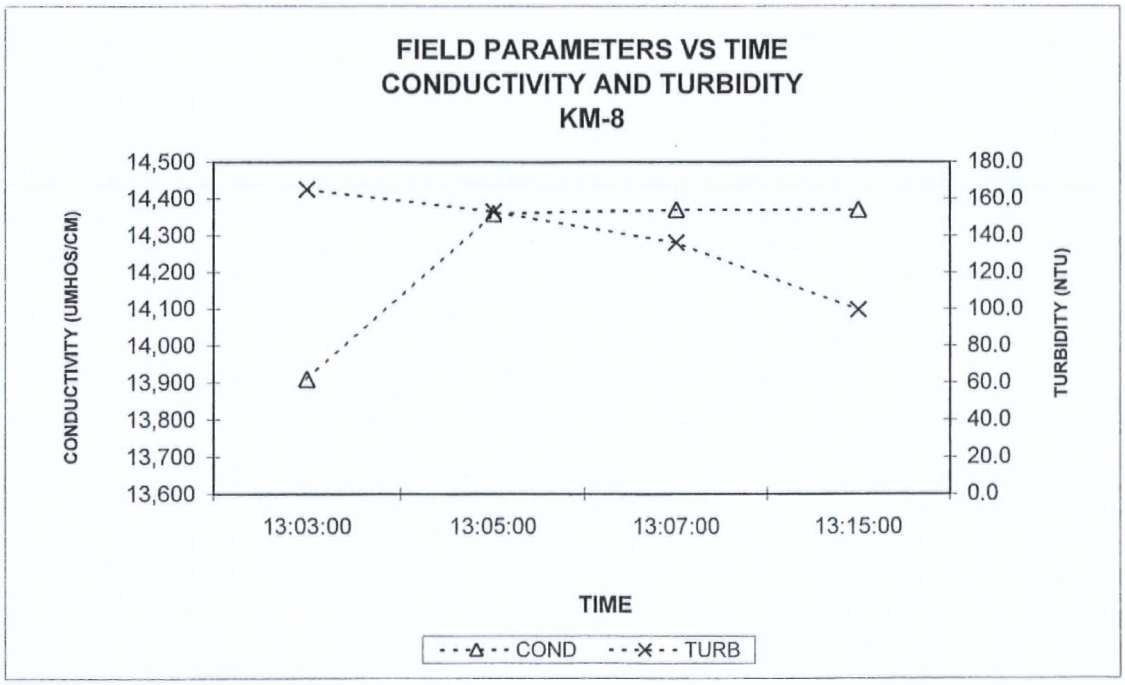
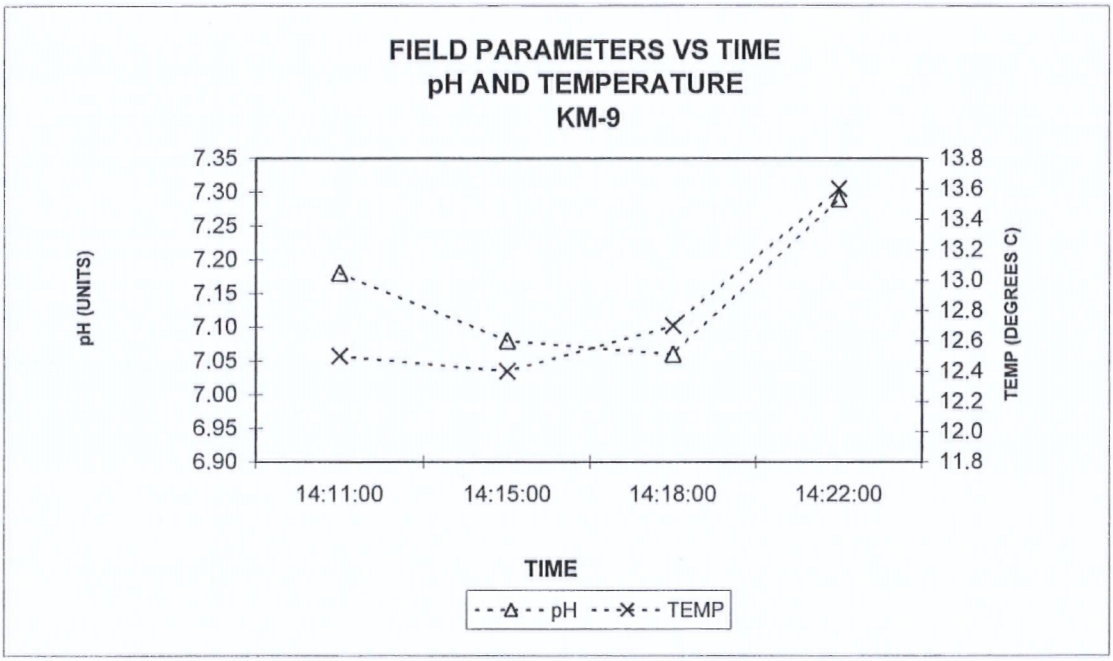


FIGURE 8

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



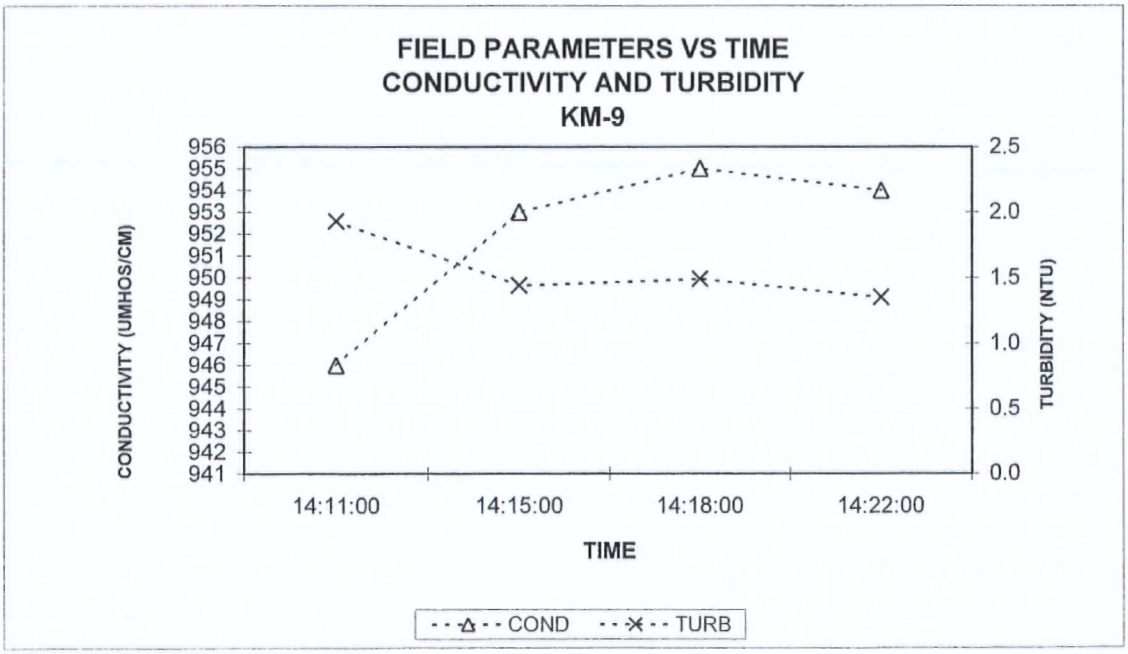
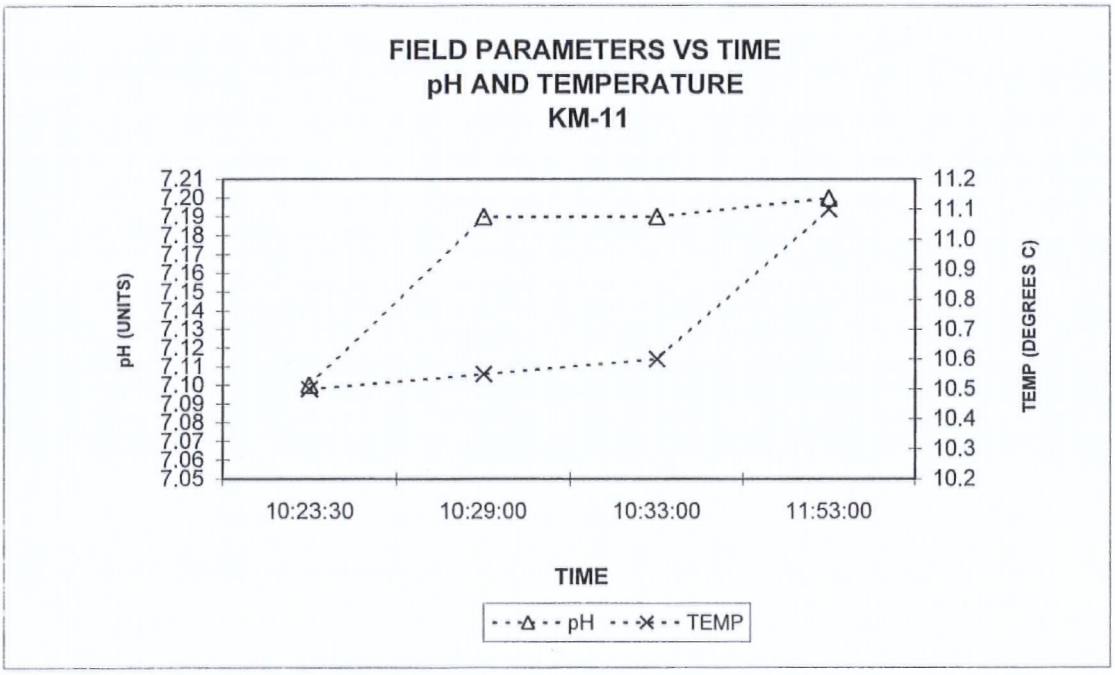


FIGURE 9

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



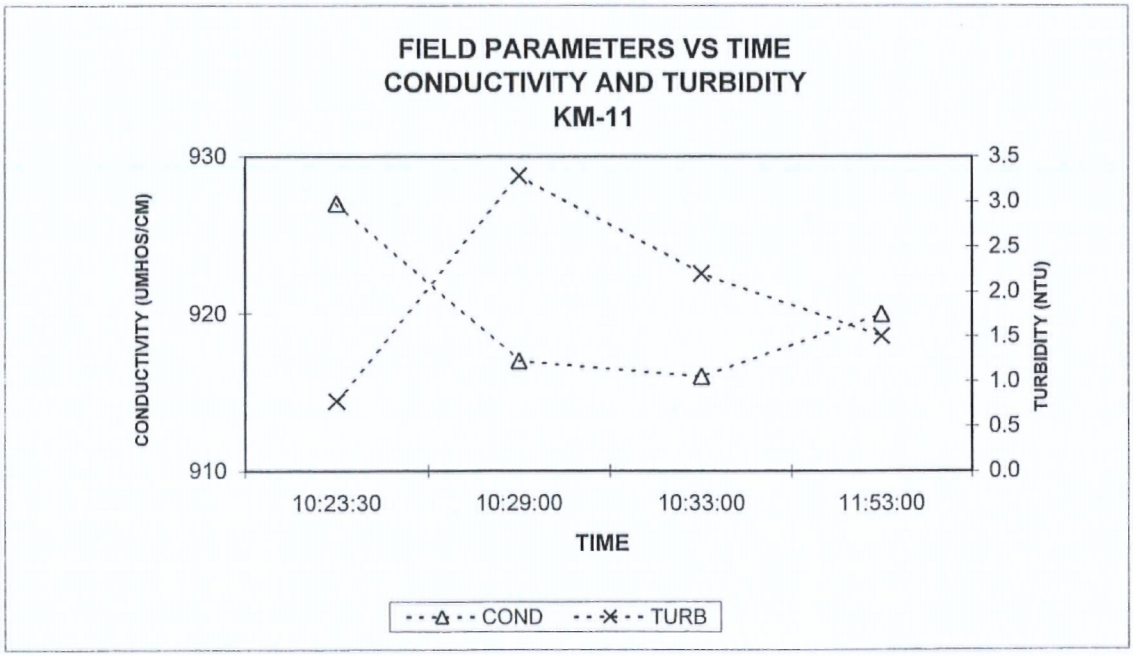
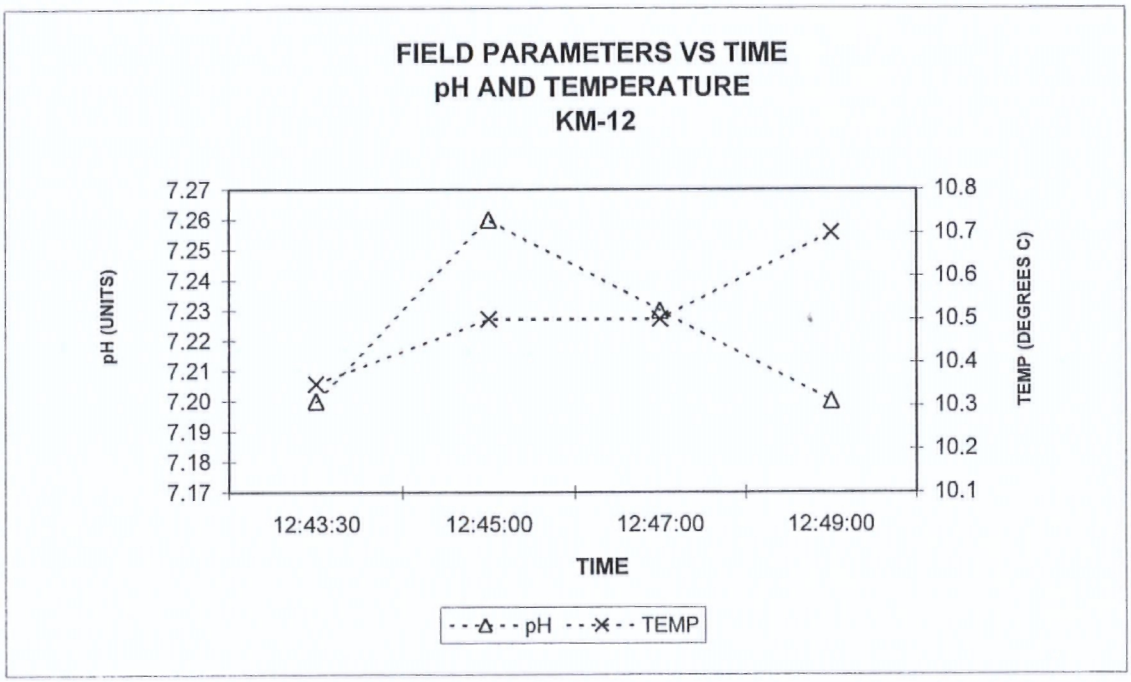


FIGURE 10

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



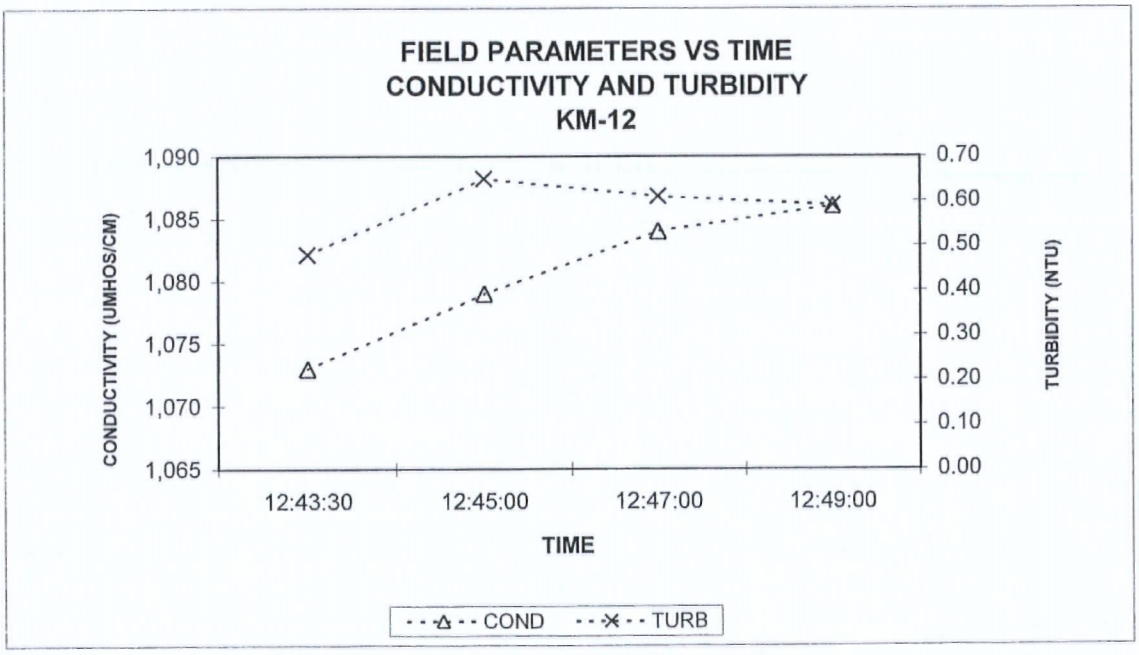
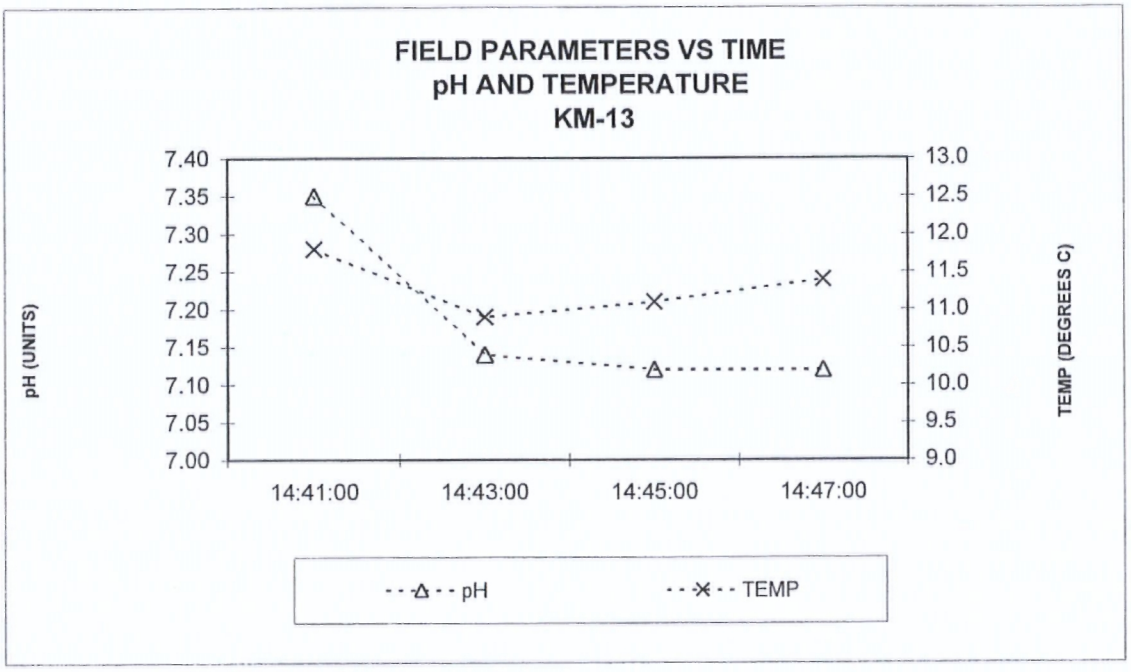


FIGURE 11

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



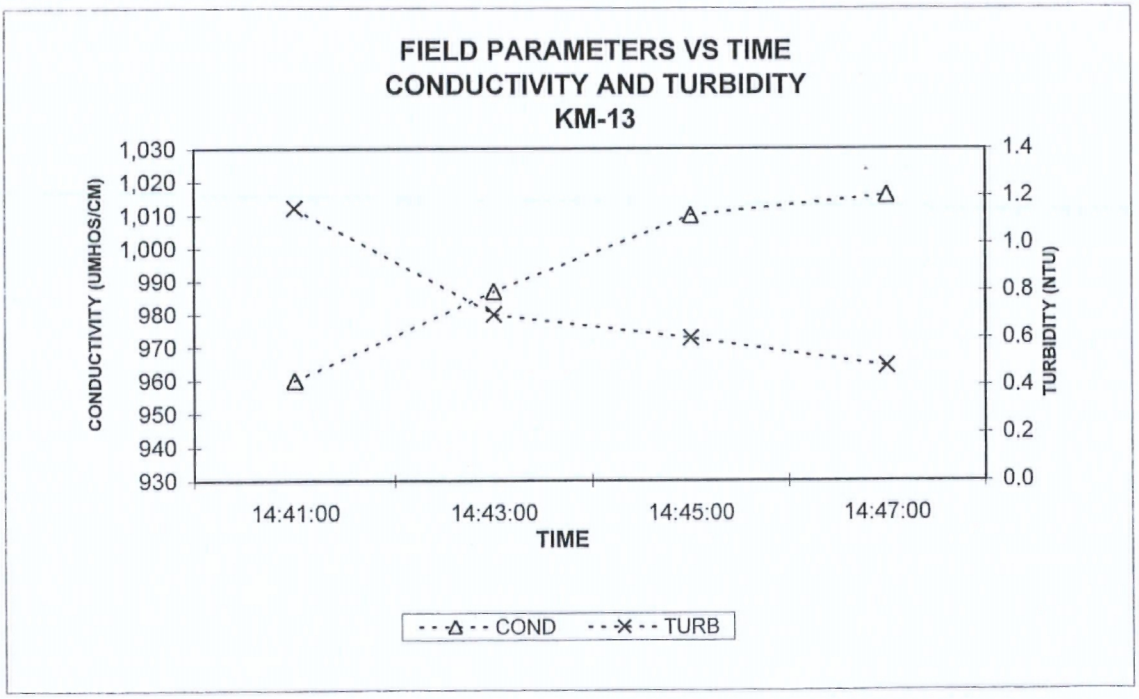
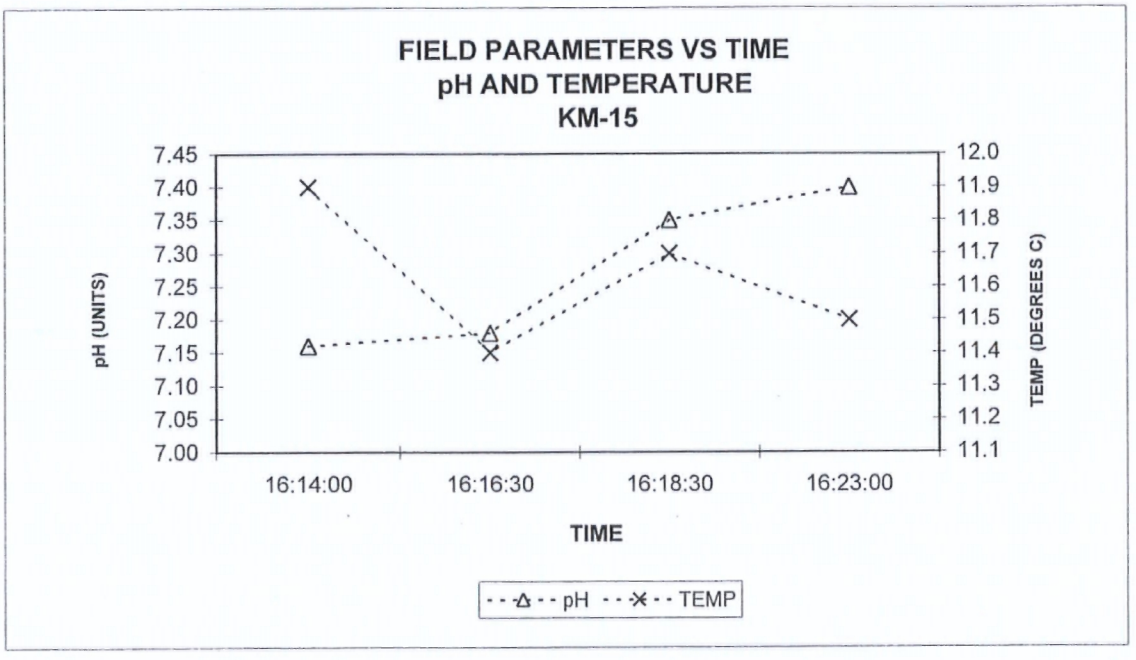


FIGURE 12

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



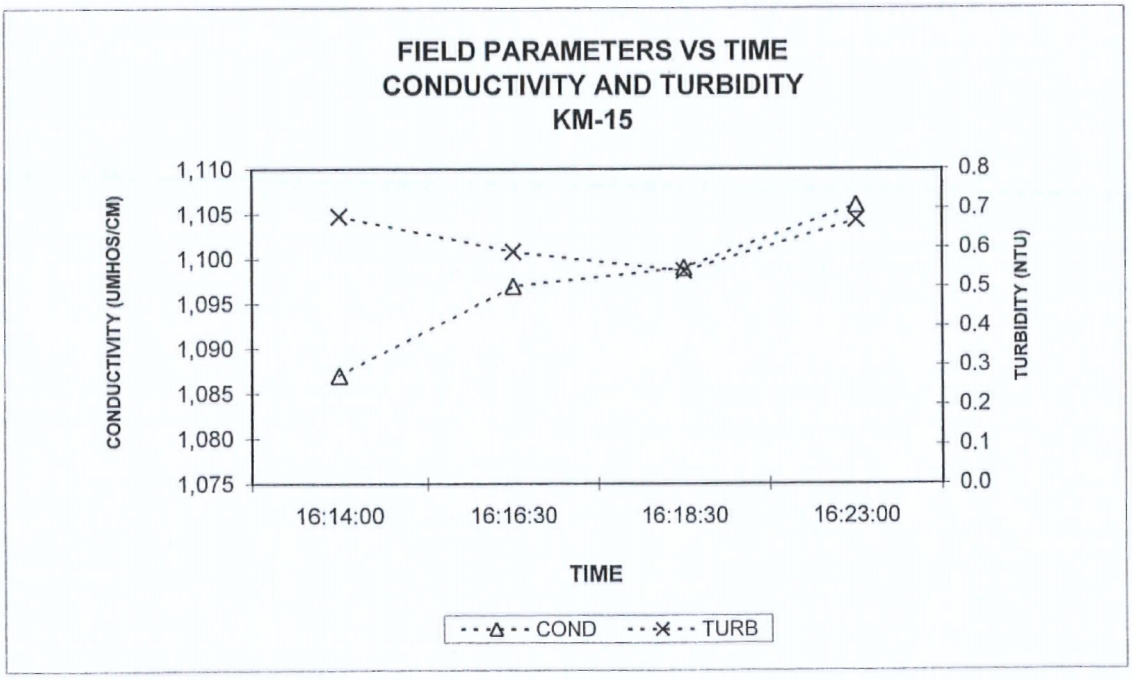
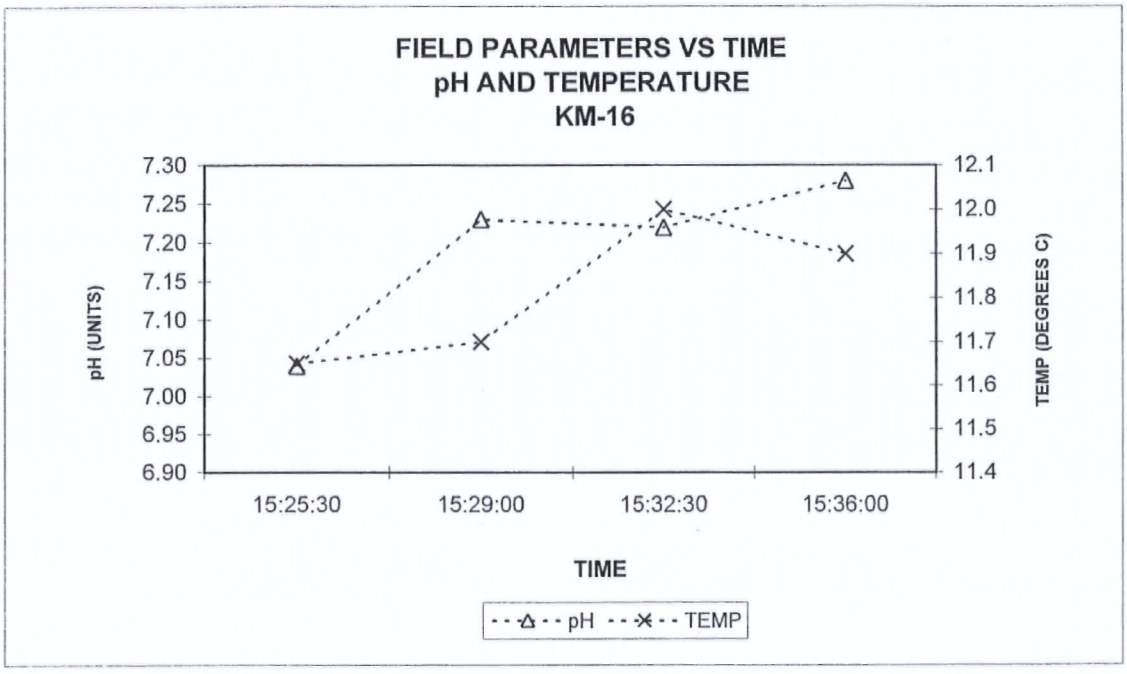


FIGURE 13

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



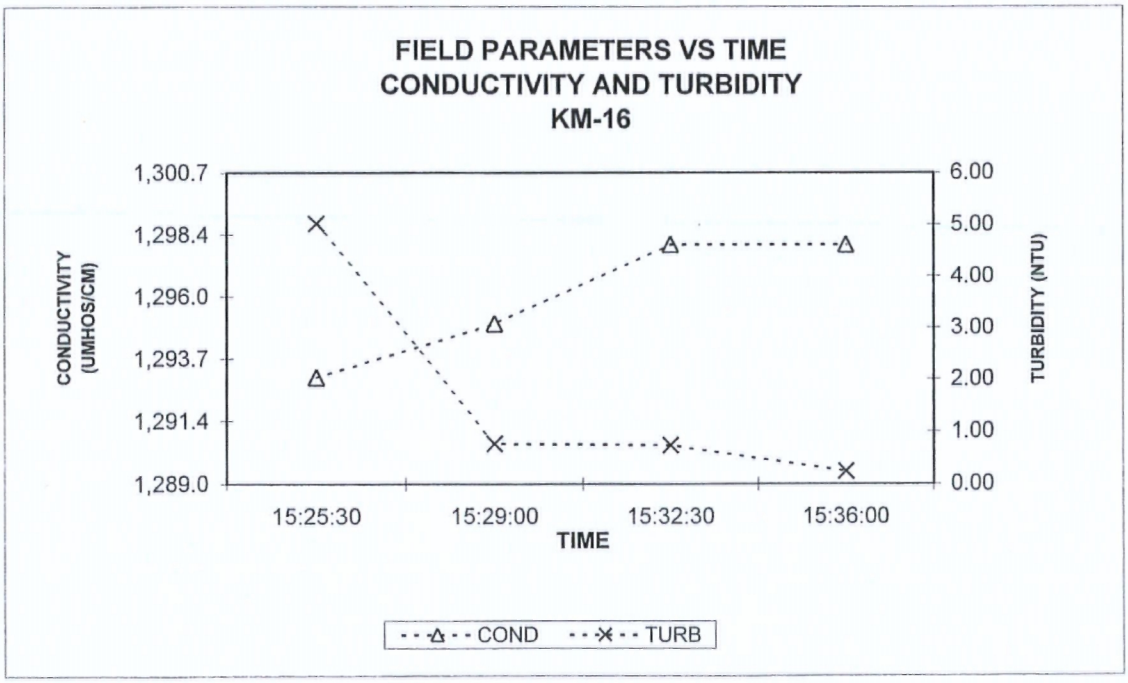
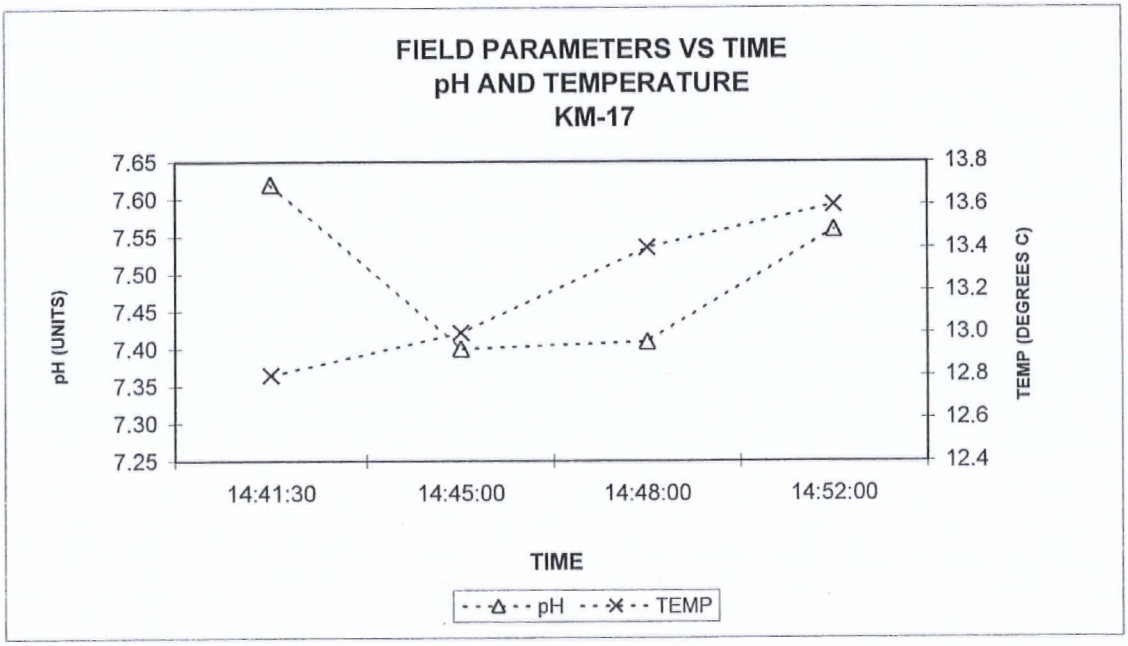


FIGURE 14

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



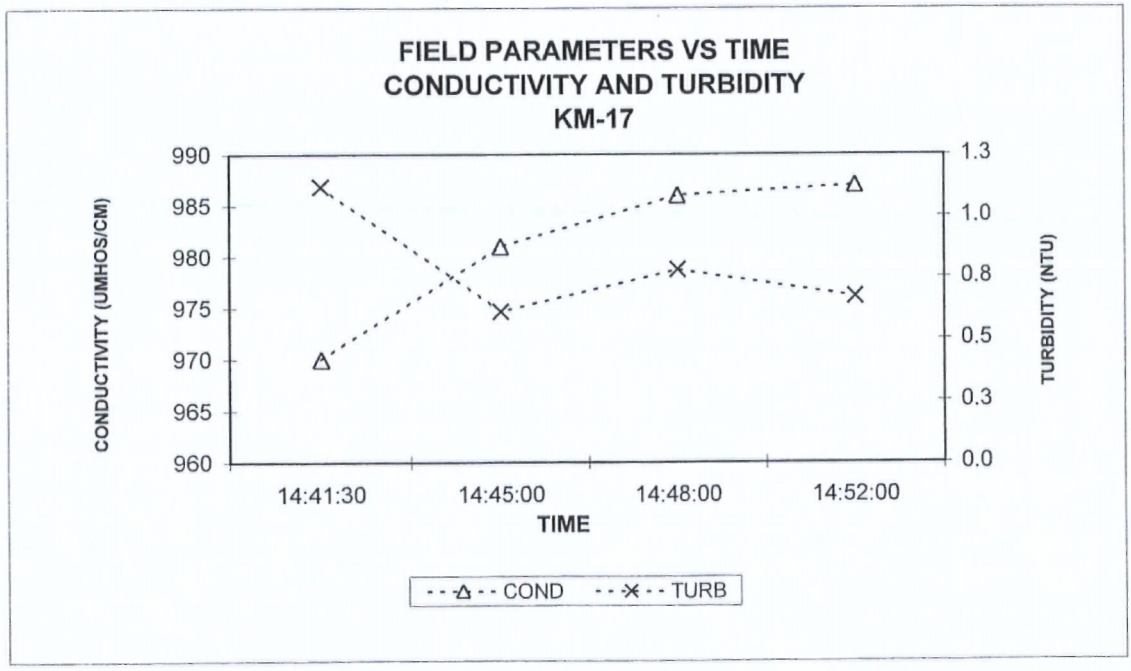
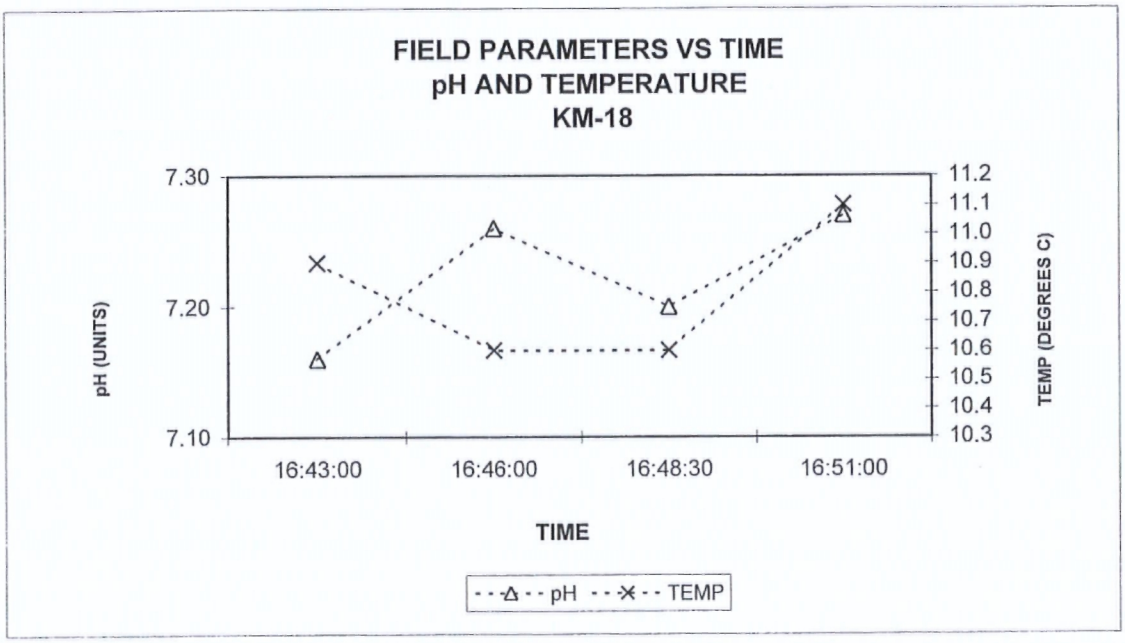


FIGURE 15

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



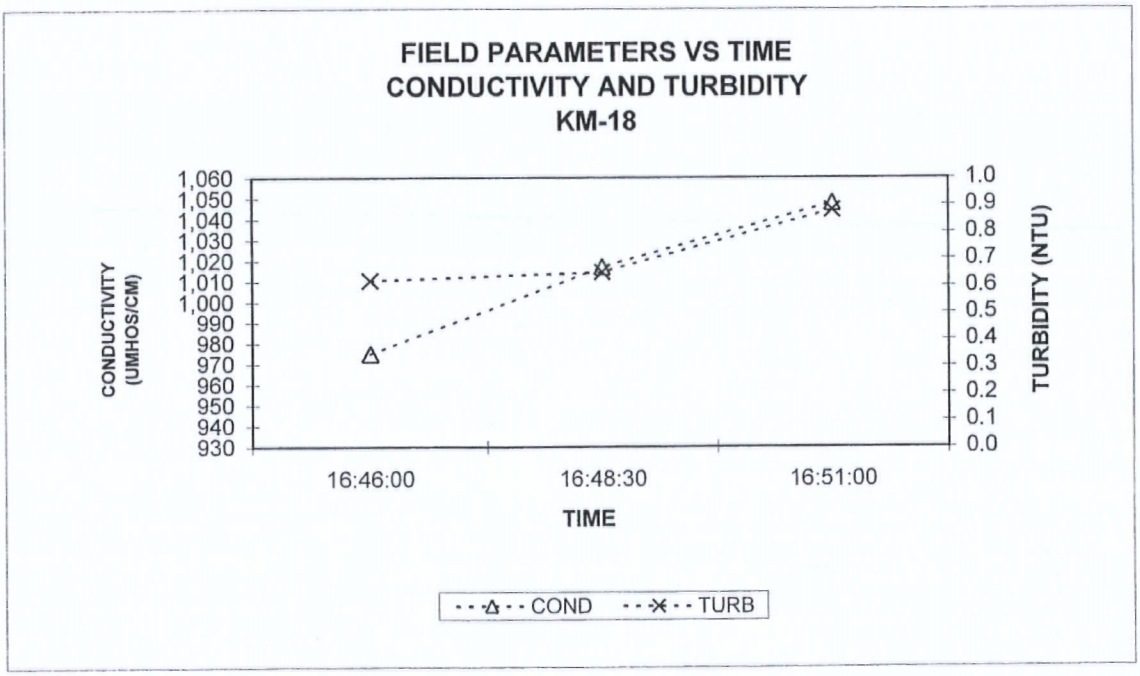
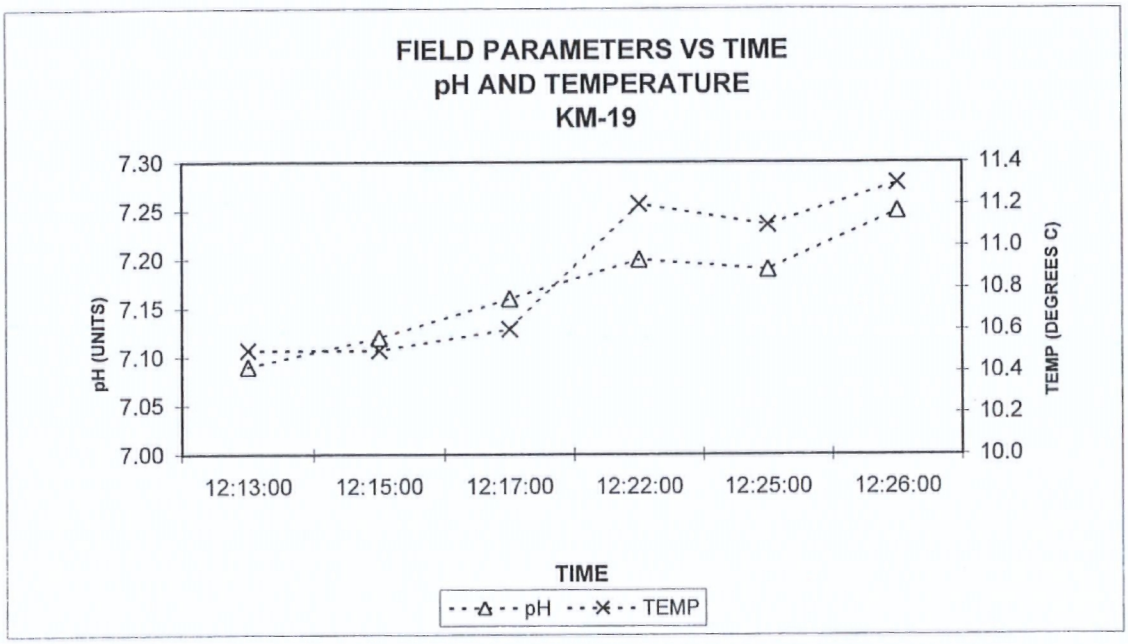


FIGURE 16

JULY 2011 LOW-FLOW SAMPLING
FIELD WATER QUALITY PARAMETERS



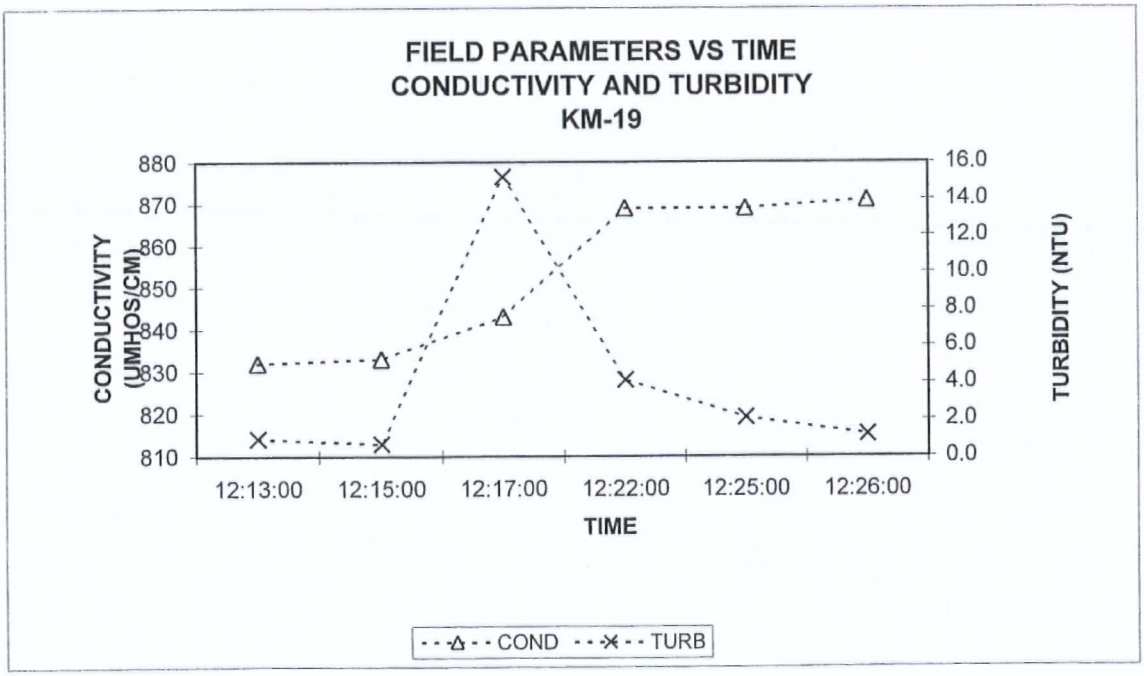


FIGURE 17

APPENDIX A

REMEDIAL DESIGN/REMEDIAL ACTION ANALYTICAL DATABASE

(ON DISK)